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THE

AMERICAN GARDEN:

AN

ILLUSTRATED JOURNAL OF HORTICULTURE

DEVOTED TO

The Gardening Interests of America.

FLOWERS, FRUITS, VEGETABLES, LANDSCAPE-GARDENING, WINDOW-GARDENING, GREENHOUSES, RURAL LIFE, HOME ADORNMENTS, AND ALL KINDRED SUBJECTS.

EDITED BY

DR. F. M. HEXAMER.

Volume V.—1884

E. H. LIBBY, PUBLISHER,

NEW-YORK

AND GREENFIELD, MASS.

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, JANUARY, 1884. No. 1.

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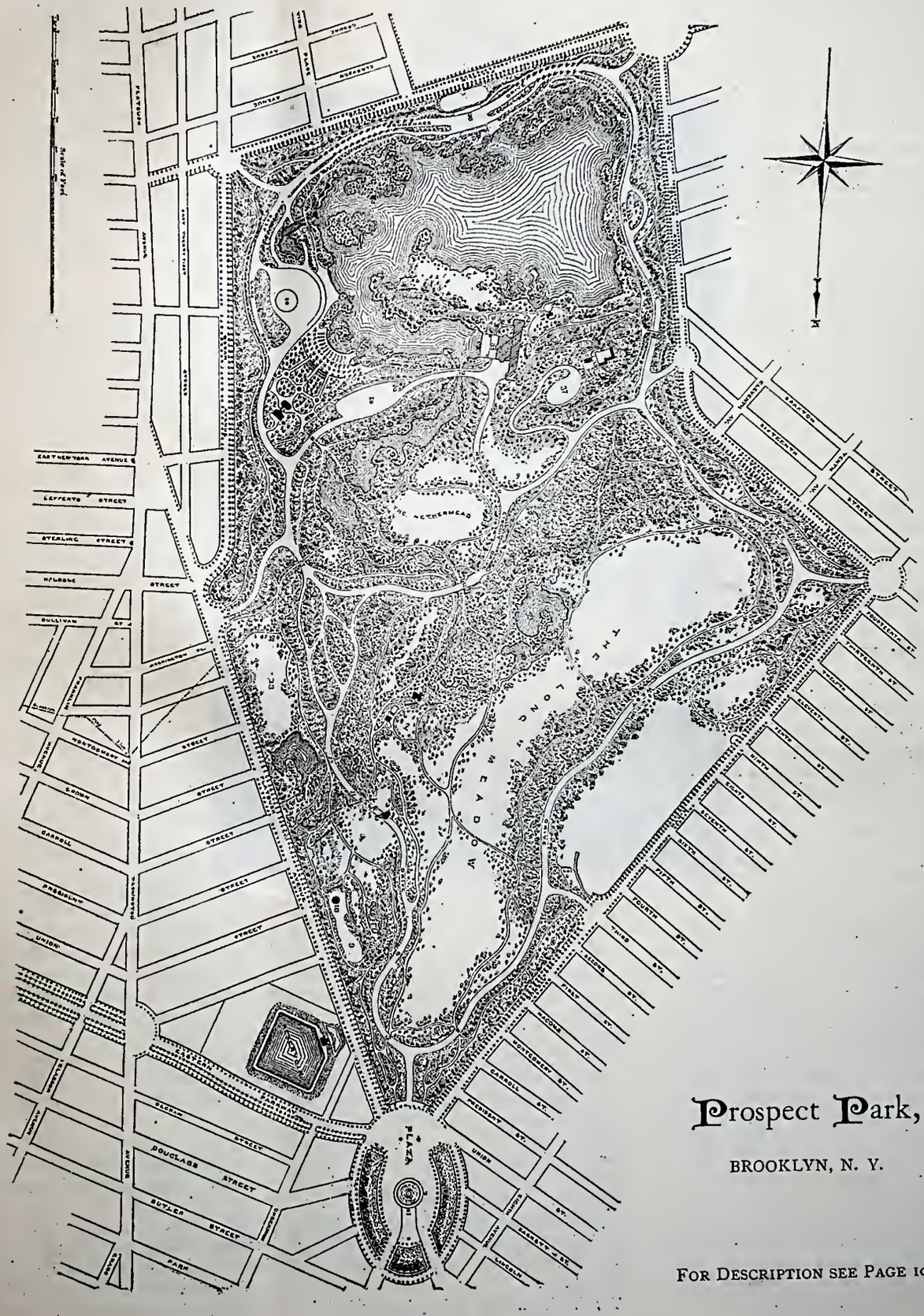

Prospect Park,

BROOKLYN, N. Y.

FOR DESCRIPTION SEE PAGE 10.

The Vegetable Garden.

SEASONABLE HINTS.

To the superficial observer or the novice, this month may not, at a first glance, suggest gardening work of much importance. Yet the gardener who neglects to take advantage of the opportunities the winter season offers for thorough preparation is apt to fall behind-hand throughout the year. Although nothing can be done in the frozen ground, the ever-ready field of our mind is as amenable to tillage and culture now as at any time. With the increased leisure which the long evenings and the cheerful influences of a cozy winter home afford, no one should fail to sow the seed and reap as rich a harvest from his intellectual garden as lies in his power.

Plans for all contemplated garden work should now be carefully considered, matured, and as fully prepared as circumstances permit.

A *Map* or *Sketch* of the garden plot, roughly drawn on paper, is a material help, and saves much time at "garden-making season." The rows for the different kind of vegetables to be planted may be marked on the paper, and the amount of seed required of each ascertained from the directions given in most catalogues.

Seeds should be ordered as soon as the varieties and quantities wanted have been determined. The earlier this is done, the surer one may be of receiving promptly just what is ordered, and of the best quality, thereby frequently avoiding much vexation and delay at a time when every hour is precious.

Fixed Rules are well enough, and necessary in certain operations; but the idea that everything in gardening has to be done according to invariable rules and unalterably established rotes is to many a great hinderance: it dims observation and dulls judgment, both of which are more essential to successful gardening than all precepts.

Coal-ashes.—With every year we become more and more convinced of the value of coal ashes. Some of their fertilizing effects may be due to the wood that is occasionally used in connection with the coal; but that sifted coal-ashes alone are of considerable value on heavy land we have become fully satisfied in many instances. On such lands all crops are benefited by their use. Some parts of our garden which had received a liberal dressing of coal-ashes during the previous winter, suffered much less from the severe drought of last summer than the adjoining ground which had not been so treated. By scattering the sifted ashes over the ground during winter, full benefit will be derived from them the following season.

Vegetables stored in cellars require occasional attention during winter; they should be examined from time to time, and have all decaying matter removed.

HENDERSON'S WHITE PLUME CELERY.

With the introduction of the dwarf and half-dwarf varieties, Celery culture has become so much revolutionized and has received so powerful an impetus, that but few gardens of any pretensions can now be found without at least one row of this delicious vegetable. The number of excellent varieties adapted for general cultivation is already large, so that one not over-sanguine should hardly have expected improvement in this direction, yet this new variety, represented in our illustration, is as decided an improvement over the old kinds as the half-dwarfs were over the giants.

The principal superiority of the White Plume Celery consists in its inner leaves and stalks being naturally pure white, so that by closing and tying the outside stalks together, and drawing a small quantity of soil against the plants, the work of blanching is completed with hardly a quarter of the labor necessary with the older kinds. In market gardeners' parlance, they require only to be "handled." This is surely a very great improvement, which will make Celery growing as easy as the culture of any other vegetable.

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HENDERSON'S WHITE PLUME CELERY.

Its other great merit is its exceedingly handsome appearance, to which even so excellent an illustration as the accompanying one can do but faint justice. As a table ornament it is as attractive as a vase of flowers almost. In quality it is equal to the best, being crisp, solid, yet tender and of a very pleasant, mild flavor, free from all rankness.

The White Plume Celery is now first introduced, and is especially recommended for fall and early winter use, as the delicate texture of its stalks and leaves does not adapt it for keeping till spring.

ASHES AS A FERTILIZER.

Under certain conditions ashes are very valuable as a garden manure, but some discrimination must be used in their application. My experience with them is that they should be applied and well worked into the soil, before planting the seed. Last spring I tested them in the hill with Potatoes. I planted two rows manured with a liberal quantity of ashes, another with lime, and another with well-rotted poultry manure. All were applied in the hill. The Potatoes in the rows where the ashes were applied were scabby, more so than I would like,—the rest were entirely free, nice, and clean. In previous trials, where the ashes were scattered broadcast over the land and then thoroughly worked into the soil, they proved very beneficial, without injuring the Potatoes, as when applied in the hill.

Last spring I planted my Salsify in a place where a large brush pile had been burned, leaving a heavy coat of ashes all over the soil, which was afterward well plowed and harrowed and laid off in drills in which the seed was sown. I never had a finer crop. The roots were large, nice, and smooth. The soil was new black loam. Scarcely a weed made its appearance; while, the year before, the weeds were very troublesome, and as the land had never been in cultivation they were allowed to mature their seed.

A good top dressing of unleached ashes is especially valuable for Onions, if not applied too thick; but to some tender vegetables they do more harm than good when used as a top dressing. They are especially good for loosening a stiff soil, on which their effect will be apparent for a long time; and, in the orchard, I do not know of anything more valuable.

The saving of ashes will pay manifold, even at an expense of building a place for the purpose of storing them. But to obtain the most profitable results, they should be thoroughly worked into the soil, especially in the garden, and should not be applied directly to root crops. Finally, it should be borne in mind that their effects are more apparent on a stiff clayey or hard-pan soil than on a black sandy loam. N. J. SHEPHERD.

DESTROYING THE PEA-WEEVIL.

A correspondent from Leicester, Mass., recommends camphor against the Pea-weevil. He keeps his Peas together with a lump of the gum in a tin vessel, and finds them all sound at planting time.—[We have tried camphor repeatedly for this purpose without satisfactory results.—ED.]

A PROFITABLE GARDEN.

As an illustration of how much a small piece of ground can be made to produce, my summer's experience may be of interest.

My garden plat, of a little less than one-quarter of an acre, is a rich, black loam. Its glory were two Mammoth Squash vines, which produced eleven Squashes, of weight as follows: The largest, 142 pounds; the next, 82½ pounds; two weighed 130¾ pounds; two others 91½ pounds; one, 61 pounds; two, 81¼ pounds; and two small ones, not matured, 26 pounds. Total weight of the eleven, 615 pounds.

The remainder of the crops were sixty-five bushels Early Rose and Beauty of Hebron Potatoes, thirty-five bushels Turnips, and some two dozen or more Hubbard Squashes which, at our regular market prices, would have brought the following amounts:

65 bush. Potatoes, at 50 cts.		$32.50
Mammoth Squashes		15.00
35 bush. Turnips, at 25 cts.		8.75
Hubbard Squashes		5.00
Total		$61.25
Cost of production:		
Seed	$5.00	
Labor	6.25	
		11.25
Net profit		$50.00

Being a profit of two hundred dollars per acre, and this without extra manure or better cultivation than is given to ordinary field crops. As the ground in this case was a formerly unoccupied waste spot of no value whatever, no charge is made for the land.

M. A. Ayers.

SCAB IN POTATOES.

Extensive experiments with remedies for Potato scab have long since convinced us of the efficacy of some special commercial fertilizers, and although the cause of scab is not positively known, its destructions can in most cases be entirely prevented. Recent experiments in this regard, made by Dr. Henry Stewart, Hackensack, N. J., fully corroborate our own experience.

The Doctor writes:

"I have just been digging some of my Potatoes (Early Rose), and send you samples. The clean large one is a fair specimen of some rows manured with the Mapes Potato Manure, eighty feet of row manured with the fertilizer produced one barrel, two and a half bushels. As the rows were three feet apart, the yield is equal to one hundred and eighty barrels, or four hundred and fifty bushels per acre. The other Potato, shown in our illustration, engraved from a photograph, is a fair specimen of those grown with cow and hen manure, yielding a barrel of fair Potatoes to three hundred feet of row, equal to a hundred and twenty bushels per acre. A large quantity, quite a half of this part of the crop, was completely destroyed by wire worms, and not more than half those saved would be fit for sale. Not a Potato, of those grown with the fertilizer alone, is touched by the worms enough to hurt it. I used ten loads of manure to a quarter of an acre and fifty pounds of the fertilizer to one-eighth of an acre."

Strong as this testimony is, we do not wish to convey the idea to our readers that we believe Mapes's Potato Manure, or any other fertilizer we are acquainted with, to be an infallible specific against scab. There may be certain conditions in some soils and seasons which defy or counterbalance its anti-scab properties to some extent. Yet we have never observed an instance in which, when properly applied, it was not productive of decided benefit. The results of recent experiments made at the "Rural Grounds," where 1048 bushels of Potatoes per acre were grown with an application of 600 pounds Mapes's Potato Manure, while unmanured ground under the same cultivation produced but an average of 200 bushels per acre, are especially notable in this regard.

SCABBY POTATO GROWN WITH ANIMAL MANURE.

DANGERS OF CANNED VEGETABLES AND FRUITS.

Canned goods occupy already so important a place among the industries of our country, and are of so much vital importance to manufacturers as well as producers in many sections, that anything that threatens to diminish their popularity deserves careful investigation.

Two cases of poisoning from the use of such goods have recently come under our personal observation. In one case, canned Peaches, eaten by a strong, healthy boy, produced severe pain, vomiting and diarrhœa; in the other, canned Beans poisoned an entire family, a nursing baby even being affected through its mother's milk. The symptoms were exactly those of poisoning from some zinc or copper salts, and serious results might have followed but for the timely assistance of a physician. In both instances the cans were purchased in small country stores, where they had probably been standing on the shelves for a considerable length of time.

There can be no doubt that the long contact of fruit acids with the metals of which the solder is composed will gradually produce poisonous salts which, although generally in too small quantities to produce immediately apparent harm, are not without injurious effects upon the health and constitution of those eating them. And the longer and warmer the goods are kept the greater becomes the danger.

Manufacturers should lose no time to find some means for sealing the cans hermetically without the use of substances which endanger the lives of their customers; or laws should be passed to make it obligatory that the year in which the goods are put up be plainly and indelibly stamped on each can. This much, it seems, the people have surely a right to demand as a matter of self-protection.

A RELIABLE SWEET POTATO.

THE EARLY GOLDEN.

Growing Sweet Potatoes very extensively for northern markets, and being particularly desirous of securing an early variety, I purchased in spring, 1881, one pound of *Early Golden* tubers, and bedded them late in April. The summer was very dry, yet I raised a bushel of Potatoes. The following February I bedded them, planted on a quarter of an acre of very poor land, manured with fifty pounds of Kainite, and dug, in October, sixty bushels of large Potatoes, many of them weighing three to four pounds. In February, of last year, I bedded twelve bushels, but owing to the cold and wet spring many rotted in the bed; nevertheless, I planted over three acres. We have had the most disastrous drought I ever knew, and while other varieties of Sweet Potatoes were nearly ruined by the heat and hot winds, my Goldens kept on growing. About the first of August, when other varieties were only of the size of hen's eggs, I dug Goldens of one and of one and a half pounds in weight. I am satisfied there is no better and more reliable Sweet Potato in the South.

J. H. Powe.

A NEW METHOD OF WATER-MELON CULTURE.

A correspondent of the *Rural New-Yorker* describes the following method by which an extraordinary crop of Water-melons was raised: Holes were dug ten feet apart each way, eighteen inches square and fifteen inches deep. These holes were filled with well-rotted manure, which was thoroughly incorporated with the soil. A low, flat hill was then made and seed planted. When the vines were large enough to begin to run, the whole surface was covered to the depth of a foot or fifteen inches with wheat-straw. The straw was placed close up around the vines. No cultivation whatever was given afterward; no weeds or grass grew. The vines spread over the straw, and the Melons matured clean and nice. The yield was abundant, and the experiment an entire success. This is surely worth trying next year.

VALUE OF MANURE.

"Much has been said of the extent of the commerce of England, with its flags dotting every sea, but the entire value of all her shipping is not equal to the value of the manure applied to the land in any single year." So says Secretary Russell.

The Fruit Garden.

SEASONABLE HINTS.

Marketing Fruits.—A good deal of gratuitous advice is frequently given to fruit-growers about the advantages of home markets. There is no doubt that many gardeners near inland cities and large villages could increase their receipts considerably by creating and supplying home markets, instead of shipping all their crops to the great fruit centers, thereby saving freights, commissions, and various incidental expenses. But it must be borne in mind that in fruit-growing, as in trades, all cannot be retailers. The large cities must be supplied through the agency of those who make a business of selling what others raise and produce.

Selling is as much a business as producing goods, and requires as much, and frequently more knowledge, skill, experience, and capital. The average cost of selling and transporting agricultural and industrial products from the farm and workshop to the hands of the consumer is decidedly greater than the cost of production, and this has to be paid by some one, and some have to be paid for doing the work and incurring the risks of the trade. It is apparent that those who devote all their time to the study of the markets and the securing of customers can sell with less expense and to better advantage than those who carry on another business which requires all their time and thought at the same time. Each one has to decide for himself according to his inclinations and capabilities; but farmers and gardeners can no more dispose of all their crops at retail prices than manufacturers of dry goods and hardware can. Local markets would soon become overstocked and prices dwindle down to nothing.

Home markets offer, nevertheless, excellent opportunities to capable and energetic gardeners if, at the same time, they are good, active salesmen; but these qualifications are not often combined in one person, as rarely, in fact, as men eminent in professions are found to be good business men.

Partnerships.—Unless gardening is carried on at a very small scale, to make home markets profitable there should be two persons interested in the business—one to devote his principal attention to the garden, the other to the sale of the products. We know of several partnerships of this kind which work very satisfactorily.

We are led to these remarks in answer to several inquiries about this subject, and also because the season to commence active operations is already on hand.

Securing Orders.—Those intending to embark in local market-gardening should lose no time to canvass the neighborhood for prospective purchasers, and to ascertain what their probable requirements may be. If definite orders from hotels or large summer boarding-houses can be secured, these alone may sustain a fair-sized fruit and market-garden. But let no one suppose that he can build up a profitable business, if he disappoints his customers and is not able to fulfill his contracts. The hotel-keeper who is left without berries and vegetables, just when his house is most crowded, is not apt to depend upon the local grower again, but will order his supplies from market centers.

SMALL FRUITS VS. TREE FRUITS.

Small fruit culture is on the increase, at the expense of tree fruit culture. The less material in the factory of fruit the less likelihood of damage from weather and animated enemies; that is, the less necessary trunk and the fewer necessary branches the better. It follows that small fruits are safer and more reliable than tree fruits. Culture has developed a large number of enemies of the latter. Fungi, insects, animals, frost, and heat prove injurious to the trunks and branches of trees, impairing their usefulness and cutting short their lives. With the exception of Grapes, the enemies of small fruits are neither so numerous nor virulent. I am inclined to believe that the reason of this is that the culture of small fruits is in its infancy; and the exception which I have noted proves the proposition that culture may develop enemies of small fruits as damaging as those that now assail tree fruits.

Yet, the fact will always remain that the former will have less wood, bark, and foliage to be molested. On this account, too, the loss of one shrub will be less serious than the loss of one tree, occupying, as it does, less ground, and being the equivalent of less care and labor. Again, small fruits are the least damaged by extremes of temperature. Where it is impossible to make the production of Plums, Pears, and Peaches a success, and an Apple orchard is the price of eternal vigilance, Blackberries, Raspberries, Gooseberries, Currants, etc., successfully resist the weather. On the plains and prairies of our country, comprising the greater part of its extent, where high winds greatly prevail, small fruits are best; for they sustain no damage from the gales that prostrate trees.

They probably require less culture. The pruning of small fruits is not such a serious matter as it is of tree fruits; but the ground which they occupy must receive more cultivation.

Considering our country as a whole, our small fruits are the greater bearers. With the exception of a few localities especially adapted to the production of some particular tree fruit, as Delaware is of Peaches, the crop of tree fruits is uncertain. The absence of trees on our prairies would indicate that there tree fruits would labor under serious disadvantages; and it is certain that there those fruits cannot be depended upon. Nor is this drawback confined to our prairies. Trees bear every other year; that is, each alternate crop is light, and total failures are not infrequent. During many years employed in the culture of fruits on the western prairies, I have never had a short crop of berries, and very rarely of Grapes; but tree fruits have failed often. In the Eastern States, I have found this phenomenon less marked; but it exists.

The greatest drawback to the culture of small fruits has been the difficulty of marketing and preserving them. But this difficulty has almost disappeared. I do not suppose that it will ever be as easy to handle and preserve small fruits as it is Apples, for they will always lack the firm texture and self-keeping quality. But later ingenuity and experience in the construction of boxes and crates, in the manner of handling, as well as later appliances and means for transportation, have made marketing no serious matter. Fifty years ago, canning fruits was almost unknown; but now it has assumed such large proportions, is so managed as to retain the flavor so little impaired, and can be done so cheaply and easily, that the preservation of small fruits is a matter as easy as of any tree fruit except Apples—and these can now boast of but little superiority in this respect.

This topic might receive further attention. But I must close, contenting myself with the prediction that in the future the development of the culture of small fruits will far exceed the development of the culture of tree fruits.

JOHN M. STAHL.

RULES FOR NAMING FRUITS.

At the recent meeting of the American Pomological Society, held in Philadelphia, the following rules for naming and describing new fruits were adopted:

Rule 1. The originator or introducer (in the order named) has the prior right to bestow a name upon a new or unnamed fruit.

Rule 2. The Society reserves the right, in case of long, inappropriate, or otherwise objectionable names, to shorten, modify, or wholly change the same, when they shall occur in its discussions or reports; and also to recommend such changes for general adoption.

Rule 3. The names of fruits should, preferably, express, as far as practicable by a single word, the characteristics of the variety, the name of the originator, or the place of its origin. Under no ordinary circumstances should more than a single word be employed.

Rule 4. Should the question of priority arise between different names for the same variety of fruit, other circumstances being equal, the name first publicly bestowed will be given precedence.

Rule 5. To entitle a new fruit to the award or commendation of the Society, it must possess (at least for the locality for which it is recommended) some valuable or desirable quality or combination of qualities, in a higher degree than any previously known variety of its class and season.

Rule 6. A variety of fruit, having been once exhibited, examined, and reported upon, as a new fruit, by a committee of the Society, will not, thereafter, be recognized as such, so far as subsequent reports are concerned.

THE IONA GRAPE.

Wherever climate and soil are favorable to its perfect development, there are but few if any varieties superior to this exquisite Grape, and we are glad to learn through the *Santa Barbara Press* that California grape-growers are gradually discovering its good qualities. It says:

"The most beautiful Grape of the season, for color, taste, grace of cluster, and rich ripening quality, is the Iona. It is a first cousin to the Catawba with an Isabella spice. It is a glowing, translucent garnet, with a purplish bloom, and ought to make a favorite table Grape, as, framed in its own olive-green leaves and tendrils, with yellow Pears for contrast, no prettier center-piece for a dainty lunch or dinner-table could be devised. Only a few of our vintagers as yet have found out how well this Grape does here, but those few are making it a specialty."

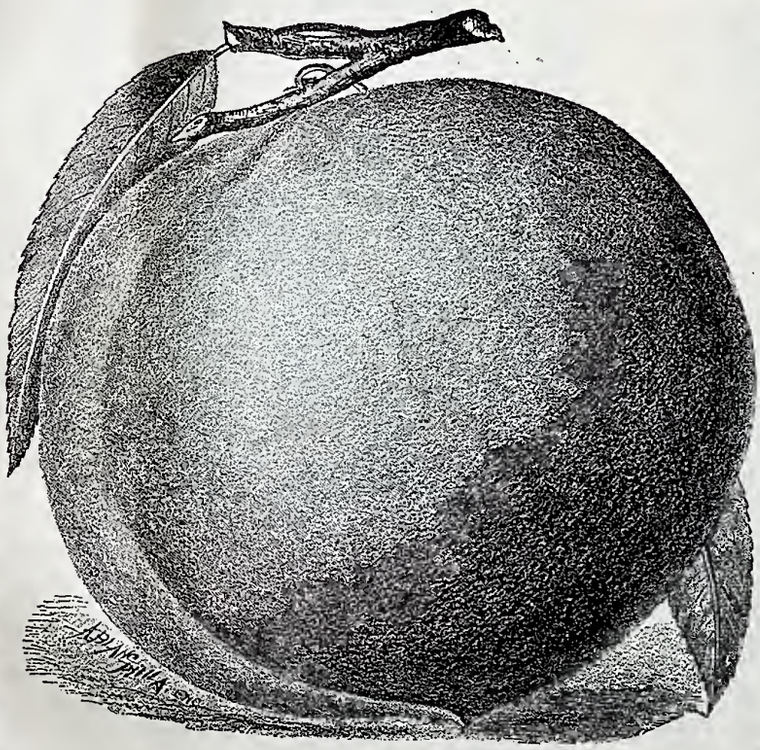
CHOICE OF PEACHES.

It is with real pleasure that we see that eminent and venerable pomologist, *Charles Downing*, still take a lively interest in the progress of fruit culture, and the following, contributed by him to the *New-York Tribune*, may serve as a valuable guide to those intending to plant:

"With their sweet, rich, juicy, melting flavor, Peaches are very pleasant to most tastes; some of the varieties, the yellow-fleshed ones in particular, are more or less vinous, which makes them especially acceptable to many persons. Modern facilities extend their season, too, large quantities being preserved each year by drying, evaporating, canning, etc. For marketing fresh, the later kinds are preferred in this locality; but the list I venture to give will afford a succession of crop from the middle or last of July till the 1st of November:

Alexander, or Amsden,
Early Louise,
Large Early York,
Yellow St. John,
George the Fourth,
Early Silver,
Mountain Rose,
Oldmixon Freestone,
Morris White,
Crawford's Early,
Foster,
Wheatland,
Crawford's Late,
Crockett's White,
Stevens's Rareripe,
Stump the World,
Steadly,
Salway.

"The Peach wants good soil and clean culture—two requisites within reach of industry; and must have hot weather—a summer condition which Providence generally supplies. Then, especially if large specimens of extra flavor are desired, there must be judicious pruning of the branches and thinning of the growing fruit. Also, be watchful against the borer, and hope that the mysterious blight of 'yellows' may not come near."



THE WHEATLAND PEACH.

TRAINING TREES.

Many orchardists advocate freedom of growth, especially in young trees. They claim that the tree will naturally throw out the form and amount of growth that the nature of the tree demands in the way of protection, thrift, and productiveness. At first thought, this theory might seem quite plausible. If the line of reasoning here adopted be followed up a little farther, however, an entirely different conclusion is arrived at. If nature set these trees thirty feet apart in an open field, I should say let the tops take care of themselves—and the roots, too, for that matter. But when I take a tree from its native location, and out of its natural protection, I feel that I have incurred a responsibility in the further care of that tree. It must be trained in a way not natural to one in the wild state, but one which will render it more self-protecting in its changed surroundings.

The young Maple in the forest grows tall and slim, because it is protected from the heavy winds by the larger trees surrounding it. There it thrives and grows amazingly; but take the same tree out of its native place, and set it in an open field, with that tall, slim top, and how long would it last? If the top be cut away, and the tree firmly braced, it will usually live and thrive.

Just so we must do with the Apple tree. Its top must be kept down, and trained to protect the trunk as much as possible. This is especially necessary upon the bleak and open prairie, where, at best, timber is not a natural growth.

Much of this work of training may be done in mild winter weather. One should have a clear idea of the form to be reached, and then work to that idea constantly.

An inverted umbrella is a good shape for the head or top of young trees. This form can readily be reached by heading back and tying down. A free cutting back of the previous season's growth, and especially the upright or leading shoots, tends to form a neat compact head to the tree. Where the limbs are inclined to grow almost directly up, the pruning should be done on the inner side of the limbs, and the outer shoots left to enlarge the top. Many tops are so stubborn in their endeavors to grow straight up, that it is necessary to tie or weight the limbs down.

Any mild day in winter is good for this work. Time enough can then be had to do the work thoroughly and systematically. Each tree should be studied, and treated according to its wants. At the same time all decayed and decaying branches should be taken out, and all crossing limbs wholly or partially removed. One has no idea how much the appearance and thriftiness of an orchard is improved and augmented by this systematic attention unless he has tried it.

Many trees that were running up tall and slim, with no signs of fruiting, are thus brought into good shape and at the same time induced to fruitfulness. Cutting off the loading shoots tends to develop fruit-buds.

Next summer's crop can be greatly increased and improved by work judiciously performed in the orchard this winter.

W. D. Boynton.

MORE GOOD GRAPES.

As some of the readers of The American Garden have requested me to extend the list of good Grapes, so as to include also the older kinds, I will name, in addition,

WHITE GRAPES.

El Dorado, full sister to the Lady Washington. To those willing to devote a little extra care it will fully repay in its fine flavor and large cluster.

Lady, Naomi, Irving, Martha, Eva, Prentiss, are all worthy of a place in the vineyard.

Elvira cracks and sets so badly as to be hardly worth cultivating, but it is nevertheless a very good Grape when fully ripe.

Goethe, although late, is a Grape that well pays for the space it occupies.

RED GRAPES.

Delaware, Agawam, Lindley, Massasoit are all standard varieties. *Iona*, one of the best of the whole, is unfortunately only suited for special locations.

BLACK GRAPES.

What shall I say of the *Concord*? It has been a friend long, and has been called the Grape for the million; but, alas! mildew and rot have claimed it, and the truth is that to-day it is one of the most unreliable of all Grapes. However, its last stage is likely to be its best. It is one of the best of stocks on which to graft the more tender varieties. Though the Concord may no longer bear Concords on its own roots, yet the hybrids, and especially the white varieties, are so much finer when grafted on it that no one need sigh over its loss.

Barry, Black Eagle, Cottage, Cambridge are all desirable.

Eumelan is especially remarkable as one of the few Grapes that will grow and succeed near the ocean, even where the spray in heavy storms may dash upon it.

Hartford Prolific requires good, rich soil to come to its highest perfection.

J. B. Rogers.

GROWING HUCKLEBERRIES.

If you want to grow Huckleberries, says W. J. Scott, in the *Husbandman*, set out young plants, about a foot high, in the spring. Mulch them for a year or two, and plow in some coarse horse manure occasionally. They are slow to start, but after they are started they grow rapidly both in bush and berry. The bushes may be cultivated with a horse. They should be set at least seven feet apart each way, as they spread considerably when full grown. It is well to set three or four small bushes in each hill.

The Flower Garden.

THE OPENING YEAR.

When winter winds are piercing chill,
And through the Hawthorn blows the gale,
With solemn feet I tread the hill
That overbrows the lonely vale.

O'er the bare upland, and away
Through the long reach of desert woods,
The embracing sunbeams chastely play,
And gladden those deep solitudes.

Where, twisted round the barren Oak,
The summer vine in beauty clung
And summer winds the stillness broke,
The crystal icicle was hung.

Where, from their frozen urns, mute springs
Pour out the river's gradual tide,
Shrilly the skater's iron rings,
And voices fill the woodland side.

Alas! how changed from the fair scene,
When birds sang out their mellow lay,
And winds were soft, and woods were green,
And the song ceased not with the day.

But still, wild music is abroad,
Pale, desert woods! within your crowd;
And gathering winds, in hoarse accord,
Amid the vocal reeds pipe loud.

Chill airs and wintry winds! my ear
Has grown familiar with your song;
I hear it in the opening year,—
I listen, and it cheers me long.

LONGFELLOW.

SEASONABLE HINTS.

The Study of Catalogues is a most appropriate and seasonable occupation of the present month, and to the real lovers of flowers it affords as much pleasure, almost, as gardening in the ground itself. Seedsmen's catalogues of the present day are not price-lists merely, but some of them are prepared with a great deal of care and skill, and contain more useful and practical information about the cultivation of flowers and garden management in general than is often found in far more pretentious works.

The Selection of Varieties among the thousands named in these catalogues is not always an easy matter to the experienced gardener even, and often one of considerable embarrassment to the novice, especially if he has a fancy for "novelties." To those to whom it is immaterial whether they spend a few dollars, more or less, for their garden, we would say: By all means give a trial to the most "promising novelties." Although it is not likely that all will come up to expectations, some of them will in all probability prove valuable acquisitions, which will pay fully for all expense and watchful care and labor bestowed on them.

Mixed Varieties of the leading species are especially to be recommended to beginners and to those who can devote but a small amount of money for their flowers. As a general rule, these mixed packets contain a few seeds, at least, of all the best varieties of the species, and do rarely fail to give satisfaction.

Bulbs stored in cellars should be examined occasionally, and decayed ones removed.

Tuberoses can hardly be injured by being kept too warm, but they should never be exposed to a temperature below 40 degrees.

Tigridias require similar treatment. Great care must be taken to protect them against mice, who prefer them to any other food.

CALADIUMS AND COLOCASIAS.

Both these plants were formerly known as Arums, to which family they in truth belong, and are separated from Arum only by botanical differences which are of little interest to the cultivator. Both are tropical plants, growing in moist situations, developing large foliage in the season of growth, and resting during a portion of the year. It is for the foliage that these plants are grown, the flowers not being especially attractive.

The garden treatment of both is the same. The tubers should be planted in the ground or turned out from pots, in which they have been started in a frame or greenhouse, about the last of May, in a rich, deep soil and in a warm exposure. If the season is dry, as they are naturally marsh plants, they should have liberal waterings. Under this treatment the Colocasias will develop enormous leaves and be conspicuous objects in the garden until killed by the frost. The tubers should then be taken up and stored in a frost-proof cellar until spring.

Although under this treatment we have

COLOCASIA ESCULENTA.

occasionally seen Caladiums do passably well, yet they never attain in this country, out-of-doors, the beauty which makes them so ornamental in the tropics. Here the bright markings of the foliage are dull, the delicate white varieties burn, and the plants do not usually grow vigorously. The midday sun under the equator is not as hot as it is in New-York in summer, and it never has that burning force which here burns, blights, and

TYPES OF CALADIUMS.

parches plants with delicately marked foliage. We have seen acres of the brightest Caladiums, and many of the white foliage varieties, in Brazil and never yet saw a leaf burned. If, however, one will shade his Caladiums out-of-doors from direct sun, he may be successful; but it is in the greenhouse one must look for the best results with these brilliantly colored foliage plants.

The indoor treatment is simply to pot the tubers, in March, in rich soil, give plenty of heat and moisture, shade somewhat to prevent burning, and, when the leaves begin to turn yellow, gradually withhold water to ripen the root. Turn the pots upon their side and withhold water until the plants are again wanted. By successive pottings, plants may be had in perfection the whole year.

As to species and varieties of Caladiums the name is legion, and every year new hybrids are produced. Some have the foliage pure white, others bright red, and there are varieties with every possible markings and marblings of red and white. Any florist's catalogue will describe many, from which a selection can be made at very small cost.

The Colocasia generally grown is *C. esculenta*; the root is edible but is not good, tasting like a flavorless watery Potato. The foliage is dark green, very large, the leaves often being two feet in diameter on tall, stout footstalks. It is one of the most effective plants for sub-tropical gardening, and is especially adapted for the margin of ponds. It does well and soon attains a large size in any rich soil, but is impatient of drought.

C. odorata is a rare species, growing from three to six feet high, with large foliage and greenish yellow, very fragrant flowers. It is an evergreen, and must in winter be kept in a greenhouse; but it does well in summer, and produces a fine effect planted out in a warm, moist, sheltered situation. The tubers of *C. esculenta* can be bought for a small amount each, but plants of *C. odorata* are somewhat scarce.

E. S. RAND, JR.

STREPTOSOLEN JAMESONI.

This is a native of Central America, and was introduced into Europe about forty years ago by Mr. William Lobb, who sent seeds of it to Messrs. Veitch, of London. But these plants seem to have been lost entirely, and others were recently re-introduced by M. Edouard André. It is a small shrub, three to six feet high, growing wild on the mountains of Central America, at an elevation of from three to six thousand feet. The leaves are of a dark, glossy green, one to two inches long. The flowers grow in terminal panicles of thirty to forty blossoms; they are bright yellow, shading gradually into orange and scarlet; about half an inch across and nearly an inch long. It is a very abundant bloomer, and is easily propagated by cuttings.

The general character of the plant is similar to the Fuchsia. It is splendidly adapted for bedding out, and will make a handsome and highly attractive house plant.

MONPAZIER, France. JEAN SISLEY.

SIX CHOICE GERANIUMS.

Our colored plate, which is mailed free to all subscribers for 1884, represents six new varieties of Geraniums, selected from a large number of seedlings for their excellent qualities both for bedding out and house culture.

Miranda is of compact habit, with delicate pink flowers marked white in the upper petals. *King Lear*, flowers very large, pure scarlet. *Mercutio*, bronzy flesh salmon color, very large trusses. *Shylock*, rich plum crimson with deep purple shades. *Ophelia*, pure white, habit neat and compact. *Darwin*, rich deep purple, with large flowers and trusses.

STATICE SUWOROWI.

Under the name of Sea-Lavender, or Marsh-Rosemary, is known a very ornamental perennial plant, which grows wild in salt marshes along the Atlantic coast, especially southward. Botanically it is *Statice Limonium*. Its graceful, lavender-colored flowers are extensively collected and dried for use in winter bouquets, and several other handsome species cultivated in gardens are used for the same purpose.

Not all Statices are perennial, however, and among the annual species are some of the most charming ornaments of the flower-garden. The most beautiful of all these — even if only half of the praise it has received in Europe is deserved — is *S. Suworowi*. Our illustration gives a pretty good idea of the general habit of the plant. Its branching flower-spikes of bright rose color, shaded with crimson, appear successively, ten to fifteen on each plant, and measure from fifteen to eighteen inches in length. The leaves, which are about five inches long and nearly two inches broad, glaucous and undulated, lie flat on the ground, forming a graceful rosette.

A great merit of the plant is that it continues a long time in bloom, its flowers lasting for two months or more; so that by sowing some seed early in a hot-bed, or in pots in the house, and later in succession in the open ground, plants may be had in constant flowering throughout summer and autumn. The general treatment of the seed and plant is the same as required for most annual flowering plants.

STATICE SUWOROWI.

DOUBLE DAISIES.

Our common White or Ox-eye Daisy is a very different plant from the true or English Daisy. The botanical name of the latter is *Bellis perennis* while the former is *Leucanthemum vulgare*.

As in most cultivated flowers, considerable improvement has been made in the size, color, and fullness of the flowers of the English Daisy; and the modern strains of improved varieties deserve more general cultivation than they receive. The principal difficulty in their outdoor culture here is that they do not stand our hot, dry summers, if fully exposed to the sun, and should therefore be planted in some partially shaded, cool place. For the edging of beds and borders in such situations, few plants are more desirable. A rich, loamy, deep soil is best suited for their perfect development. They are propagated by division of roots or from seeds.

The new variety "Longfellow" is especially recommended for growing from seed. Its flowers are of deep rose color, very double, and remarkable for their long, stiff stems, which latter quality is of considerable importance in a bouquet flower. Seed sown outdoors in spring will generally not produce flowers before the following season; but by sowing it in a frame, or in boxes in the house, the latter part of winter or early spring, and transplanting the young plants outdoors at the proper season, flowers may be obtained the same year.

DOUBLE DAISY—"LONGFELLOW."

THE CALLIOPSIS.

Last summer I had a circular bed in the garden which attracted considerable attention and afforded me a large degree of satisfaction. The center was a Canna — Marechal Vaillant, I think, — any way, a strong, vigorous grower, with very large, glaucous green leaves. It sent up half a dozen stalks to the height of four feet, and was a very stately, dignified plant. About this I planted Calliopsis, with Master Christine Geraniums, about a foot apart, in the circle, and outside of this circle I had a row of white Phlox, and edged the bed with the low blue Lobelia. You see the combination of colors I had — bright rosy pink from the Geraniums, among the rich, dark velvety brown of the Calliopsis, with the white of the Phlox as a contrast, and the blue of the Lobelias to set off the Phlox.

All of these flowers are remarkably free bloomers, and furnish strong masses of color, and are among our best plants for using where strong effects are desired. The contrast and harmony of the Geraniums and Calliopsis was very striking. I have used the latter plant alone with good results in a large bed. The darker sorts have an intensity of color that is velvety in shade and almost fiery in sunshine. The dark sorts are by far the best.

I think excellent effects might be produced by using a pale yellow Hollyhock, of the double Chinese varieties, for a center-piece, and planting the mazarine blue Larkspurs about it, edging the bed with a two-foot wide circle of the Calliopsis. The soft yellow, the rich blue, and the more intense crimson or maroon or black-brown — for it is all these, according to the light you see it in — of the Calliopsis would combine most strikingly and effectively.

EBEN E. REXFORD.

CHRYSANTHEMUMS IN POTS.

Although Chrysanthemums may be brought to great perfection in the outdoor border, to obtain the largest and best-shaped flowers, most perfect forms and truest colors, and highest development in general, the plants should be grown continuously in pots. *Mr. John Thorpe*, who is probably the most experienced Chrysanthemum grower in this country, gives his pot plants the following treatment:

The cuttings or suckers which come directly from the soil are best for propagation. These are taken from the parent plants as soon as they are three to four inches in length. About the first week in March, when probably one-third of the varieties are rooted, — the others being put in as cuttings at this time, — the young plants are potted in three-inch pots in ordinary potting soil. As soon as required, they are repotted into four-inch pots in soil to which about a fiftieth part of bone-dust is added. The next shift is into six-inch pots, well drained, and in soil composed of rich turfy loam, with a good sprinkling of bone-dust.

The plants are kept in the house until the first of May, "stopped" from time to time as required, and afterward plunged outside in an easterly exposure. They have to be kept carefully watered all the time, and given occasional soakings of guano water — one ounce of guano to three gallons of water being a good proportion. By the first of June all are potted into their blooming pots, stopping and tying the shoots as required.

From the beginning of July until taken in the house in October, they have to be watered several times a day, every two or three hours sometimes; and this, although expensive, is absolutely necessary for the production of the best developed flowers. The last "stopping" is made during the last week in July.

The Chrysanthemum, although more exempt from insect enemies than almost any other genus of plants, becomes sometimes infested with black aphides, which may be easily removed by fumigation in the house, or by sprinkling the plants with tobacco dust, if outdoors. The white and black thrips are also troublesome occasionally, but yield to the same treatment and plenty of water.

The Window Garden
AND GREENHOUSE.

SELECTION OF HOUSE PLANTS.

Select fresh, healthy plants for winter culture, for they will repay all the labor you bestow upon them by bright flowers. The old Geraniums, Heliotropes, Fuchsias, etc., which have flowered all summer, will be of no value for window gardening, while young plants will soon be covered with buds and flowers. Small plants in small pots are far more desirable for house culture than large plants in such cumbrous pots that it requires a man's strength to move them.

There are several winter flowering Fuchsias which will continue to bloom from October until May, in beautiful luxuriance, if you will only give them a spoonful of "*Soluble Pacific Guano*" once in two or three weeks, or give it in a liquid form by dissolving a table-spoonful of it in three quarts of hot water. It will also destroy the white worms which are so apt to infest the soil of plants that have not been repotted frequently. At least, it proved an antidote with me last season. But if it does not exterminate them, take a piece of unslacked lime as large as a man's fist, and slack it in hot water in an old pail, and when the lime has sunk to the bottom, water the plants with it, and it will make their foliage luxuriant and destroy worms of all kinds. The lime can be used over several times.

Tea Roses, if well treated, make lovely plants for winter. Purchase well-rooted plants of *Bon Silene*, *Safrano*, *Bella*, and other varieties, and put them close to the glass and stimulate weekly with weak liquid fertilizers; or a *Jacqueminot* Rose which bloomed in the summer may be taken up and potted in an eight-inch pot, with the richest compost made friable with sand or sharp grits; cut back all the old wood and pull off every leaf and place it in a frost-proof window, but where the sun shines in well, and you can force as handsome rose-buds as the florists.

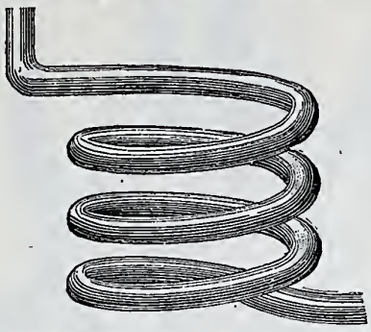
For a small amount of money a collection of winter-flowering plants can be procured; and though they will neither feed nor clothe the body, yet they will minister to the needs of the soul, which sometimes hungers, thirsts, and shivers, while the body is luxuriously fed, and clothed in fine raiment.

DAISY EYEBRIGHT.

A CHEAP HEATING APPARATUS.

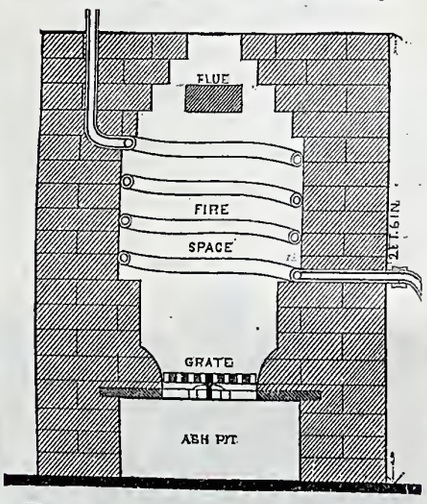
We have occasional "cold snaps" here in South-eastern Tennessee, when the temperature goes down to zero. So pits have to accommodate the greenhouse plants; but as soon as those are cared for, human nature wants winter bloomers, and a greenhouse with a stove becomes necessary. I have a modest attempt at such a building, 13 x 6 lean-to, being the end of a "porch" or "veranda."

It is heated by a remarkably cheap and effective apparatus. I secured an old coil discarded from the blast-furnace here at scrap price. The coil is of inch iron pipe, and is 18 inch diameter, and has four turns. Originally, it had several more turns, but they leaked, so I cut out the sound portion. The grate is 8 inches in diameter. The pipe is built in and carried up to 2 feet 6 inches high from grate, so as to form a fuel chamber above the flue, as shown in our illustration. The upper end of the coil forms the flow and the lower the return. They are conducted into a zinc-lined tank 12 feet long, 20 inches deep, and 12 inches wide, running under the front bench. [The suggestion of R. Cole in your October number, that "if the supply-pipe is carried to the extreme end of the tank, the water will be kept in constant circulation," is a purely theoretical one, for if the return-pipe is taken from the bottom of the tank, and the flow put in just under water level at the top, the hotter water will float on the cooler water in the most perfect way. Plunge your hand, as I have done since writing the above, into the water after



the fire has been lit an hour; try it with the thermometer 108° Fahr. on the surface; at 6 inches depth the water begins to fall, at 7 inches depth it is 60° Fahr.]

Our tank holds over 100 gallons, and the night before, when the thermometer outside stood 18° Fahr. and a stiff north wind blowing, the fire was lit at 4.30 P. M. and never looked at till 9 A. M. next morning—Poinsettias, Coleus, and similar tender plants all right. The fuel used are coke screenings, which here and at all furnaces using coke are thrown away—so cost only hauling.



The cost of the entire arrangement is as follows:

Plank and zinc lining	$10.00
Piping and fittings	4.00
Brick work	4.50
Labor in fitting up	5.00
Extras, say	1.50
Total	$25.00

The labor necessary for the maintenance of the fire is but a minimum, and the heat is steady and reliable enough for ordinary purposes.

The cost of fire per day is one bushel braise, costing two cents hauling. Can any one beat that?

WM. M. BOWRON.

ALLAMANDA.

A genus of beautiful climbing shrubs, natives of Central and South America. They have mostly rich golden-colored flowers, which are very showy. A large, well-flowered plant, being a splendid sight when well trained, either on a flat trellis, or in a pyramidal form. To start in the spring they require a warm temperature, which should be given not later than March, so that their growth may commence sufficiently early to produce flowers as soon as possible, it being on the points of the young shoots that the flowers are produced.

A soil composed of equal parts of good fibrous loam and leaf mold, with a sprinkling of well-rotted manure, is most suitable. As the plant requires an abundance of water during its growing season, thorough drainage, to allow the water to pass off freely, is a necessity. In fact, all plants of a strong, vigorous nature which require an abundance of water at the roots should be well drained; it is imperative for their health that the water passes off freely. A plant can scarcely get too much water if well drained; but if at fault in this respect, the roots may get completely destroyed in a short time.

The no-drainage system in the culture of plants is only suitable with small plants growing in small pots, and in these only for a short time. All plants which are to remain for any length of time in the same pots, unless well drained, will soon show the bad effects unless considerable care is taken in watering.

I believe in pressing the soil around the roots of the Allamanda as firmly as possible. Unless this is done, the flowering season is not so long, nor are the flowers so numerous. After potting, place in the warmest part of the greenhouse, freely use the syringe overhead to encourage growth and prevent insects. Train the shoots as they grow into some suitable form and in such a manner as to present the most pleasing effect. For an exhibition plant, the pyramidal form is the most appropriate, as it shows the flowers to the best advantage. Toward fall, when the plant becomes exhausted and the flowers are less abundant, lessen the water supply gradually, and ripen the wood as well as possible, after which the plant may remain in a greenhouse until starting time, with just sufficient water to keep the wood from shriveling.

A. Hendersoni is the most handsome species in cultivation. It is not such a straggling grower as some other species; its flowers are of a rich, deep orange color, produced in great abundance. Young plants, when well cared for, bloom freely.

A. Schottii is a strong growing kind, producing large, bright yellow flowers. The growths of this species, when young, should be pinched back, which gives a more compact habit to the plant.

A. nerifolia. The hardiest species of the genus, a native of Brazil, of a bushy habit, producing a panicle of deep yellow flowers, not only from the end of the shoots, but also from the laterals. The individual flowers are not so large as the aforementioned kinds, but more numerous. It is a plant well worthy of being in every collection, and never fails to excite admiration.

All delight in a warm, moist atmosphere, and are propagated by cuttings.

M. MILTON.

CHŒNOSTEMMA HISPIDA.

Among the many desirable plants recently brought to notice, the Chœnostemma deserves a prominent place, and although not new to botanists, its good qualities as a house plant seem to have been strangely overlooked. The flowers are star-shaped, pure white, about a quarter of an inch in diameter, and borne in so great a profusion as to completely cover the small, bushy plants. It is an almost continuous bloomer, admirably adapted for the window garden, as well as for growing in vases and baskets outdoors in summer.

HOW NEW ROSES ARE PRODUCED.

"Where do the new Roses come from? Who discovers or makes them? If they are made, how are they made? Does it pay to make them? What is the reason that of late years Roses generally seem to be getting larger than they used to be?"

These and several other related questions were asked of a prominent florist, and thus reported to the *New-York Sun*.

"New Roses," he replied, "come from England and France mainly, although some are produced in other European countries, and a few, very few, may claim to be American. When you see a Rose that you have not been accustomed to seeing, it is by no means safe, however, to assume that it is an altogether new one. It may be simply one that has disappeared from public view for a number of years, and during that time has been kept in existence by some individual grower who has had a particular liking for it. Look at the Bon Silene and the Niphetos, for instance. Both are old Roses. The first-named was once discarded in this country, and went entirely out of popular knowledge for fifteen years. When it re-appeared it came from France to Boston, thence to this city, and from here spread everywhere. It is now a generally popular favorite. It is not large, but its buds are perfectly formed, and it has a charming tint.

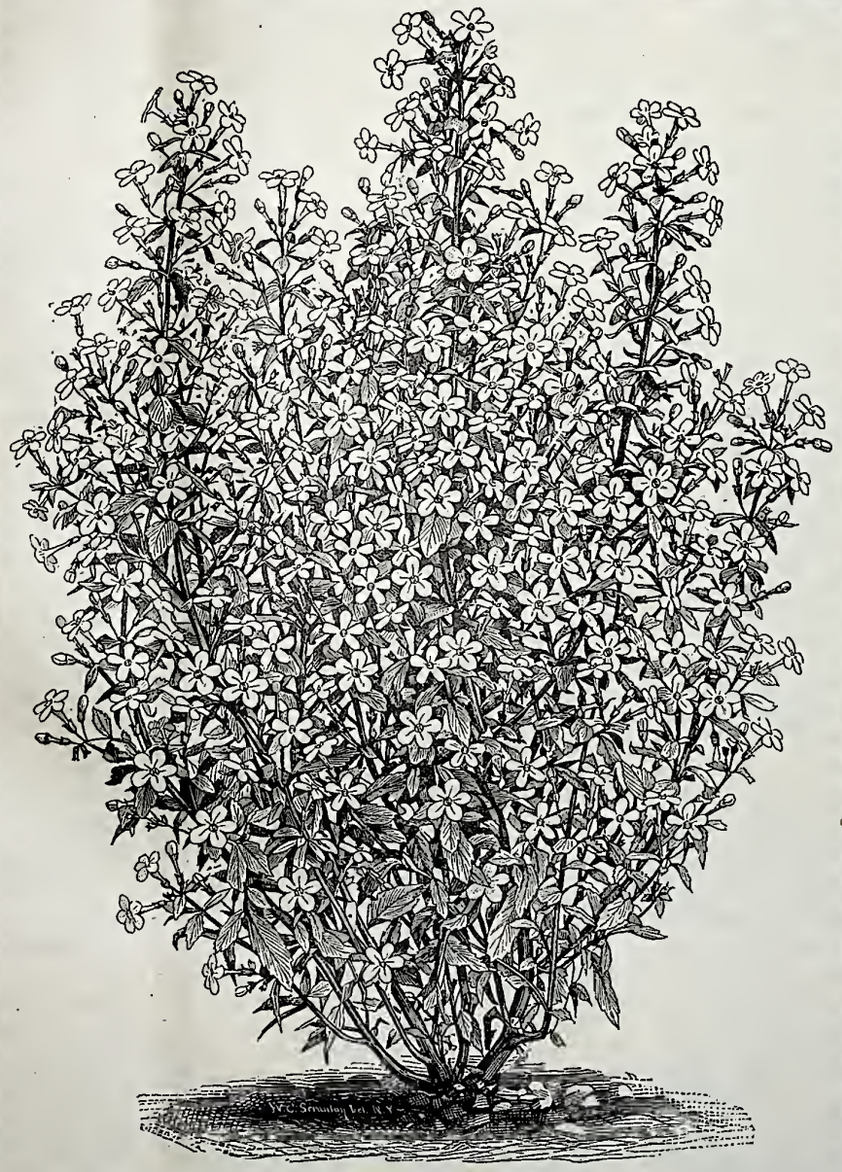
"The long, white, beautiful buds of the Niphetos were grown here forty years ago, but, through some chance, nobody seems to know exactly how, the variety became entirely lost, and twenty years elapsed before it re-appeared. When it did re-appear it was introduced into the trade in France by a man named Granger. Where he got it is a mystery. He called it by its original name, but claimed that it was an entirely new Rose. Old growers, however, knew it was not new. It is universally admired; and now that we have learned far more than we used to know about the cultivation of this sort of Roses, gardeners find it a profitable variety. It requires a great deal of heat all the time, and it is difficult to bring it into fine bloom unless it is humored in every way.

"But you ask me how new Roses are made. They are grown from the seed. Patient men, with a mildly speculative bent of mind, in France and Germany, give their whole minds to it, and their work begins even before the formation of the seed. To explain: The large new Roses are technically known as 'hybrid perpetuals,' and are crosses between, or descendants from, the hardy June Rose and certain varieties of the remontant Roses. The remontants are those commonly and incorrectly known as monthly Roses. They are not monthly, any more than their children are perpetual. Their French name signifies remounting, or continuing to ascend, and is given to them from their habit of sending up new shoots and putting forth new bloom almost continuously through a great part of the year, without any definitely prescribed flowering season. The flower of one of those Roses—a choice one, ripe, fully open, and perfectly developed—is used to impregnate another Rose, also as perfect as can be selected of the hardier variety, and the seed from the impregnated flower is carefully saved, and, in due time, sown.

"Acres upon acres the grower fills with the experimental plants that spring from these seeds, which occasionally reproduce the parent plants, but are far more likely to develop into an infinite number of varieties, good, bad, and indifferent. These young plants have to be carefully tended for three years before it is known what they will be. Then, if the grower gets two or three new varieties that are really fine, he is content; and if he obtains half a dozen he considers himself in great luck for getting so many out of 10,000 seedlings, to which he has given three years of patient care and skillful cultivation. The remaining 9994 are only brush, fit merely to burn. Sometimes, when they are all in bloom, he sees that he might just as well burn the whole 10,000; but that is exceptionally bad luck. He ought to get one out of the lot, anyway. Suppose that he does—the work has just begun. In order to get back his investment in the experiment and make anything by it, he must have 5000 or 10,000 plants ready to throw upon the market at once. Then he springs his new Rose as a surprise upon the trade, and it commands good prices.

"All these plants must be produced from his one solitary little seedling. It has to be kept in constant heat in the greenhouse, its rapidly making new wood being snipped off and propagated as fast as possible, and the plants so produced being used to start others, and so on for two years before the discoverer of the new Rose can venture to say to the public, 'How do you like my new beauty?'

"But, even then, do not suppose that the subsequent cultivation of that Rose is all plain sailing. Many Roses that have been great successes in England and France have been entire failures over here, the great change in climatic conditions preventing their development. Very often they will not bloom at all here, or, if brought to flower, the result is so bad that it does not pay to cultivate them. But this cannot be determined until after two years of trial. No prudent gardener would discard a plant because it failed the first year. It must get acclimated. Then the development of the second year may be just enough to encourage him to give it a third year's trial; and, after all, it may turn out to be useless."



CHŒNOSTEMMA HISPIDA.

Lawn and Landscape.

PROSPECT PARK.

(For Plan, see Title-page.)

About two miles from the City Hall or true center of Brooklyn, Long Island, and a half hour's ride by the horse-cars from the principal ferries of that city, is situated a pleasure-ground which in some respects we may term the most noteworthy in America. Prospect Park with its five hundred acres is by no means the largest or most elaborate place of public resort in the country, but it has this one distinguishing characteristic above all other parks in that it realizes in the highest degree the true pastoral idea, the embodiment of which gives the old English lawn its special and peculiar charm.

The main approach to Prospect Park is perhaps the most artistic feature it possesses. A great oval paved space of ten acres, called the Plaza, and situated at the junction of Flatbush and Ninth avenues, introduces the visitor at once to the most agreeable and impressive portion of the park. Embracing from its high point of vantage a comprehensive view of Brooklyn for miles, the effect of this Plaza is greatly enhanced by the character of its boundary lines, which consist of several mounds twenty-five feet high, covered with choice Evergreens. It is curious to note how, with all their actual artifice, these mounds impress the observer as genuine bits of the natural formation of the region. In the center of the Plaza is a colossal fountain and statue of President Lincoln.

Passing through this noble vestibule, distinguished alike for amplitude, symmetry, and dignity, we enter upon the area of the park itself. Our space does not, of course, permit us to describe in detail the many features of interest that meet one at every turn throughout the intricate maze of six miles of carriage drives and eleven miles of foot-paths, but we will consider briefly a few of the more important and attractive points.

As we enter and saunter along the west side of the park, we find ourselves completely shut out by trees and shrubs from Flatbush Avenue, a few yards away. The sense of the close neighborhood of the city is still farther eliminated by the natural woodland appearance of the system employed in arranging the trees and shrubs. A short distance from the Plaza, a glimpse through an archway under the main drive, evidently placed at precisely this point for a distinct purpose, reveals a great far-reaching sweep of undulating meadow fringed by remnants of an original forest of Oak, Elm, and Chestnut. This green or Long Meadow, as it is called, consists of not over twenty-five acres of open grass space; but its natural hills and hollows have been managed so as to give, through our peep-hole of archway, the impression of an unbroken perspective of miles. This feature is the most important in the park; for, without a single carriage road, a field of ample dimensions is offered for the illustration of the pastoral idea.

"Thousands of people," says the "Report" of the landscape architects, "without any sense of crowding, stroll about the level or undulating, sunny or shady turf spaces that are to be found in this strip of pasture or woodland." Here, as elsewhere, the original features are not only strictly adhered to, but actually intensified by raising the hills with soil and trees and deepening the hollows. Old forest trees are generally throughout the park carefully preserved.

Passing on by a deep dell where a small pool and steep hill-side are beautifully ornamented with choice specimens of rare trees and shrubs, and where the water and open ground are arranged specially for the amusement of children, we come by devious ways past a deer paddock, protected by a sunken moat and fence, to an important region of the park.

Here we find, on the borders of a lake of sixty acres, an open space finely decorated with carved stone balustrades and vases. Within this space grow some of the best trees and shrubs of the park, choice Elms and Maples from Japan, America, and Europe, and on the hill-side, remarkable specimens of Rhododendrons and Conifers from all parts of the world. It may be truly said that some of these Conifers, Silver Firs, and Arbor Vitæs, are hardly equaled by those of any other lawn in America. The spot is, moreover, so fortunately protected from cold winds, by embowering hills, that Evergreens which usually fail north of Washington and Virginia are here found in perfect health and vigor. Cannas, Colocasias, and other tall-growing foliage plants, tastefully arranged, thrive vigorously and produce a rich tropical effect. A rich display of bedding plants, Coleus, Geraniums, Salvias, Alternantheras, etc., is presented at this point year after year in connection with the refectory and shelter, which are perhaps the most ambitious architectural structures of a park where the pastoral idea of wide-spreading turf and woodland is intended to be everywhere dominant.

Passing under an archway and down by a lovely pool where stands the skate-house in winter, we come to the grove where the band discourses sweet music in summer, and so on, past wide meadows and bold hill-sides clothed with fine Evergreens, to Lookout Hill, the highest point in the park. From this point the eye wanders over a distant view of the ocean on one side, and on the other over the great city of Brooklyn. The same sense of largeness of design accompanies this outlook that is felt in considering the general treatment of the park, whether the subject be meadows, trees, or water.

Turning our faces toward the main entrance and Plaza, we pass through a lovely ravine with picturesque masses of rock covered with Rhododendrons, Evergreens, and vines, and on by a quaint dairy-house and restaurant embowered in charming masses of the Japan Ivy or *Ampelopsis tricuspidata*. Not far from here, across the Long Meadow, we meet numerous groups of the grand old native forest trees that have here as elsewhere been carefully and judiciously preserved, and frame so beautifully the open grass spaces of Prospect Park.

We might ramble, indeed, for hours over the walks and drives of this noble pleasure-ground and find charming near and distant landscapes at every turn, but the longer we ramble, the more surely we arrive at the conclusion that, for attractive open spaces of greensward and valuable specimens of rare and choice trees, Prospect Park must bear the palm over all other parks in America.

S. PARSONS, JR.

Horticultural Societies.

NEW-YORK HORTICULTURAL SOCIETY.

The "Show of Floral Designs and Decorations," held on the 4th and 5th of December, was in its way as great a success as the "Chrysanthemum Show" of the previous month, and as a whole was the best and most remarkable exhibition of this kind we have ever seen. Think of it,—an exhibition of floral designs without a single actually hideous exhibit! Who ever heard of such a thing? Moreover, that among the many hundreds of designs there were but very few which did not produce a pleasing effect, may be considered highly complimentary to the good taste of the New-York florists. In the limited space at our disposal, it would be impossible to describe even the best pieces only of each class; so we have to confine ourselves to the most prominent ones of the whole.

The "Dinner-table Decorations" attracted probably the largest share of admiration, although to our mind better taste was displayed in the arrangement of the baskets and trays. The fruit prize of $100 was awarded to Hauft Bros. The table was circular, about eight or nine feet in diameter. In the center was a large circular bed of La France Roses; radiating from this were five arms in the form of rose-leaves, representing flower-beds. Four of these were thickly dotted with Roses, one kind to each bed, viz.: General Jacqueminot, Niphetos, Maréchal Niel, Catherine Mermet, and the fifth contained a great variety of choice Orchids. Around all was a heavy, rounded band of Firebrand Carnations, and all intervening spaces were filled in with fresh, smooth rock moss. A ring of about a foot in width was all the space left for the service proper, consisting of twelve plates with full appointments. A corsage bouquet of one kind of Roses was placed on the plate for each lady, and a button-hole bouquet of the same kind of Rose on the plate of each gentleman. The flowers employed were of exquisite beauty, and the general effect was very striking. Yet we should think that during the hours of an elaborate dinner it would become somewhat monotonous. The greatest merits of the arrangement consisted in the excellence of the flowers and from the view of utility, in that its highest point was raised but a few inches above the level of the table. Some of the competing designs, although more tasteful in their general arrangement, were so high and massive as to completely hide one's opposite neighbor, which, under circumstances, might spoil all one's pleasure of the entertainment.

The decoration which to our taste would have been the best of all, but for the unfortunate circumstance that it was placed on so small a table, or so small a table under it—we could not tell which—as to completely spoil its effect. On a table half as large again it would have been perfectly charming. Its main design consisted of a bank of Selaginellas running through the middle of nearly the entire length of the table. In the center was a graceful specimen Tree Fern, *Alsophila Australis*, surrounded with various foliage plants. At each end of the bank was a graceful group of Begonias and small Ferns, and midway between these

and the center-piece were elegant groups of La France Roses. We hope the artist who displayed so much taste in this arrangement will try his hand again under more favorable circumstances.

Among the plateaus and baskets were several of exquisite taste and graceful arrangement. A basket of about three feet in diameter was filled mainly with Maiden-hair Ferns, interspersed with a hundred more or less beautiful Catherine Mermet Roses, and edged with a rayed circle of a great variety of rare and brilliant Croton leaves. The effect produced by this simple arrangement was exceedingly pleasing.

The bouquets, of which there were a great many, of all styles and for all purposes, were almost without exception very tasteful. Most of them contained only one or two kinds of flowers in combination with Adiantums and *Asparagus plumosus*. The nondescript indiscriminate flower mixtures, formerly called bouquets, seem fortunately to have been discarded by the New-York florists —forever, we hope.

Of funeral designs there were the usual assortments of crosses, sickles, clocks, altars, lyres, broken wheels, etc., etc., many of which found enthusiastic admirers; but we must confess our inability to sufficiently appreciate this style of decorative floral art. We must except, however, a slanting cross of about four feet in height, the body made of Camellia leaves, and the stem and arms gracefully entwined with a loose wreath of Maiden-hair Fern, interspersed with Roman Hyacinths. This simple design was so inspiring and touching, that if sympathy and love can be expressed in leaves and flowers—we thought —this unpretending cross came nearer to the embodiment of the most tender human sentiments than anything we have ever seen before. Another similar and hardly less effective and chaste cross was made of Ivy leaves and overhung with a wreath of Maiden-hair Ferns, Callas, Lilies of the Valley, Roman Hyacinths, Violets, and Roses.

Many other really meritorious designs, as well as the grand exhibits of Roses and cut flowers, have to be left unmentioned; but in closing, we cannot omit to tender our congratulations to the New-York florists, as well as to the officers of the society, for the unparalleled success of this exhibition.

MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.

The fifth annual meeting of this society will be held in Kansas City, Mo., from the 22d to the 25th of January, 1884. A rich intellectual treat may be expected by all present, and that the occasion will be pleasant and enjoyable as well, no one who has attended a meeting of this excellent society will doubt for a moment.

NEW JERSEY HORTICULTURAL SOCIETY.

This flourishing society will hold its annual meeting on January 22d and 23d, at Camden, N. J. The place of meeting being right in the heart of the great fruit farms and market gardens of New Jersey and Pennsylvania, a large number of prominent horticulturists will be present, and a most interesting session may be predicted. Circulars may be obtained by addressing Secretary *E. Williams, Montclair, N. J.*

Obituary.

DR. LOUIS E. BERCKMANS.

On the 7th of December died, at the venerable age of 84 years, at Fruitland, Augusta, Georgia, Dr. Louis E. Berckmans, father of the celebrated horticulturist, Hon. P. J. Berckmans, First Vice-President of the American Pomological Society.

Dr. Berckmans was a native of Belgium, coming to this country in the early prime of manhood. He first resided at Plainfield, N. J., where he built up a beautiful place, removing later to Georgia, on account of his failing health. He settled at the charming place now owned by his son, where he established the famous Fruitland Nurseries, and from where, a few years ago, he moved to Rome, Ga., to spend his remaining years in quiet and retirement. He was a man of rare ability, extraordinary attainments, and highest moral character. His scientific training and comprehensive mind led him at an early age to the study of natural sciences and fine arts, and his love of the beautiful in nature inclined him to the pursuits of horticulture and especially pomology. He was intimately acquainted with all the prominent horticulturists and scientists of his time, and those who knew him best loved and admired him the most. No one has done more for the horticultural development of the South than he.

With the death of Dr. Berckmans, his State and the entire country loses one of its most distinguished and honored citizens, of whom it can be said in truth that, through his own work and example, he left the world better than he found it.

To his son, our dear friend, and his family, we extend our heartfelt sympathy, and although well aware that words can offer but little comfort in the hour of bereavement for the loss of such a father, whose mortal form is laid to rest forever, there is some consolation in the assurance that his great legacy to his fellow-men—his glorious work, his noble deeds—has left its indelible impress upon this and future generations.

Miscellaneous.

PEPPERMINT OIL.

The annual production of Oil of Peppermint throughout the world is estimated at about ninety thousand pounds, two-thirds of which is produced in Wayne County, N. Y., where over three thousand acres of land are devoted to Mint culture. The State of Michigan furnishes the next largest product, and recent attempts to grow Mint in Mississippi have proved highly satisfactory.

OUR WATCHWORD.

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"NIL DESPERANDUM."

There's never a day so sunny
But a little cloud appears;
There's never a life so happy
But has its time of tears.
Yet the sun shines out the brighter
Whenever the tempest clears.

There is never a garden growing
With Roses in every plot;
There's never a heart so hardened
But it has one tender spot,—
We have only to prune the border
To find the Forget-me-not.

There's never a sun that rises
But we know 'twill set at night;
The tints that gleam in the morning
At evening are just as bright;
And the hour that is the sweetest
Is between the dark and light.

There's never a dream so happy
But the waking makes us sad;
There's never a dream of sorrow
But the waking makes us glad;
We shall look some day with wonder
At the troubles we have had.—*Ex.*

THE HUSBAND'S OPPORTUNITY.

It is doubtful whether the male head of a family often appreciates the opportunity he has for diffusing sunshine at home, or comprehends how much of gloom he can bring with him in a troubled face and moody temper from the office or the street. The house mother is within four walls from morning till dinner-time, with few exceptions, and must bear the worriments of fretful children, inefficient servants, weak nerves, and unexpected callers. And she must do this day after day, with monotonous regularity. The husband goes out from the petty details of home care; he meets friends; he feels the excitement of business competition; he has the bracing influence of the outdoor walk or ride. If he will come home cheerful and buoyant his presence is like a refreshing breeze. He has it in his power to brighten the household life and add to the general happiness in a way that no man has the right to forget or neglect.—*From "Home Brightening" in Outing.*

NOTICES OF THE PRESS.

THE AMERICAN GARDEN, always attractive, is made unusually so in its new cover and by a full-page colored illustration—the latest and handsomest. THE GARDEN is rapidly gaining in America the honored position held by its London namesake in England.—*New England Homestead.*

THE AMERICAN GARDEN, published monthly by B. K. Bliss & Sons, of New-York, improves with each number. It fills a blank long felt by those who cultivate the earth for its fruits or its flowers and gives practical information of great value.—*Boston Journal.*

ONE of our best Eastern exchanges is THE AMERICAN GARDEN of New-York. It is replete with useful information, much of which is suited to all sections of the country, even this far-away Pacific slope.—*Riverside (California) Press and Horticulturist.*

THE AMERICAN GARDEN contains a large collection of choice articles for the florist, vegetable gardener, and the general horticulturist. It is an ably edited, valuable periodical, always reliable and useful.—*Republican Standard.*

THE AMERICAN GARDEN is one of the neatest and most practical amongst our exchanges. There is an air of thoroughness about it that we like.—*Agricultural Epitomist.*

THE AMERICAN GARDEN.—This handsome, gardener's magazine continues to please all its many readers.—*Feathered World.*

OUR BOOK TABLE.

Agriculture and Industry will be the title of the consolidated *Agricultural Review, De Bow's Review* and *Southern Industries.* It will be published monthly, and simultaneously from New-York, Washington, and New Orleans.

Massachusetts Horticultural Society.—The weekly bulletins of this model society have made their re-appearance, and are heartily welcomed to our table. The first one contains an excellent essay on "Hedge Plants and Hedges," by *J. J. Thomas.*

The Rural New-Yorker has reached an enviable position among the agricultural journals of America, and in many respects occupies to-day an eminence never before reached by a publication of its kind. It not only gives its readers all the information obtainable from the most reliable sources and the best writers in the land, but also the results of its own extensive and carefully conducted Experimental Farm.

The Continent, now our near neighbor, continues to be acknowledged the model weekly magazine of America. Although it has already reached so high a degree of excellence that improvement seems almost impossible, every number has some articles and illustrations which excel anything that appeared before. Dr. Henry C. McCook's "Leaves From the Note-Book of a Naturalist" alone are worth the subscription price for a whole year.

George W. Collings' Directory of the Agricultural Implement Manufacturers and Dealers in the United States, published by the Baker-Collings Co., Chicago. This handsome, substantial volume of over two hundred pages, contains a complete list of all dealers of agricultural implements, alphabetically arranged by States, and a separate list of the manufacturers. The arrangement is so excellent that any address may be found in a moment. To any one connected with this great manufacturing industry, or to advertisers desiring to reach this trade, the book is invaluable.

ANSWERS TO CORRESPONDENTS.

Killing Mice.—*P. J., Halifax, N. S.*—We have tried various methods for ridding frames and borders from mice, and find the "Poisoned Wheat," or "Mitchell Wheat," sold generally in drug-stores, the easiest and most convenient exterminator. All that is necessary is to drop a few grains in their burrows.

Lye Wash for Fruit Trees.—*Rev. J. R. L., Orange Co., N. Y.*—One pound of commercial potash to four gallons of water is the usual proportion for this wash. It should be applied with a brush or swab just before a rain. For cleaning Orange trees from scale insects, considerably stronger solutions are used without injury. We concur in your high opinion of the value of wood ashes.

Forcing Lilies.—*C. F. D., New Haven, Conn.*—Different species of Lilies do not force with equal facility, and each kind has to be treated according to its specific nature. The Bermuda Easter Lily and all varieties of *Lilium longiflorum* force very readily and much quicker than Japanese Lilies. All should, however, be given time to make roots before bringing them in a forcing temperature. The bulb alone cannot supply the necessary food for the plant and flowers.

Cold Grapery.—*M. T. G., Yarmouth, N. S.*—When it is not desired to have ripe Grapes very early, artificial heat is not necessary in a grapery. The cost of building a grapery varies in different localities, and according to the degree of finish desired. A modest structure could be erected for about ten dollars per running foot, perhaps less even, up to almost any amount. During 1883, several exhaustive articles on this subject appeared in THE AMERICAN GARDEN, which contain all the desired information.

Transplanting Trees in Winter.—*Mrs. J. F., St. Louis, Mo.*—It is hardly worth the trouble to transplant young Maple trees with a frozen ball of earth. They will do fully as well when transplanted as early in spring as the ground permits. The young branches should be cut back about one-half, and so as to give the tree a good shape. The cutting off of the entire top is, to say the least, a questionable practice. Of course, care should be taken to mutilate the roots as little as possible in taking them up, and to make a sharp cut wherever they become broken or lacerated.

The "Desk Tool," manufactured by the celebrated advertising agents *Lord & Thomas, Chicago,* is about the most convenient and neat combination of a type measure, ruler, and check-cutter that can be imagined. It costs only ten cents; but after having used one for about a week, we would not take a dollar for it, if we could not get another one.

Literary Note.—E. P. Roe, of whose novels over four hundred thousand copies have been sold, and who is well known to horticulturists as a fruit-grower, is now writing what may be called a farmer's novel in *Harper's Magazine.* "Nature's Serial Story" is the romance of a country home, with pictures of farm and country life by Gibson and Dielman. It began in the December (Christmas) number.

Kemp's Manure Spreader, manufactured by the *Kemp & Burpee Mfg. Co., Syracuse, N. Y.,* and advertised in our advertising department, is one of the most valuable labor-saving implements ever invented. It not only does the work of many men with as much ease as water runs from a sprinkling cart, but it also enhances considerably the value of the manure, on account of its being much finer and more evenly spread than is possible by hand.

Freesias, about the valuable qualities of which we have spoken in previous numbers, are rapidly gaining deserved recognition. Mrs. Wood, of West Newton, Mass., who with her two sons favored us with a visit, and kindly placed a bunch of flowers upon our table, informs us that Freesias are already in great demand in Boston, and that they are just being introduced by the New-York florists. From what we have seen of the flowers we consider them remarkably adapted for floral work of various kinds and shall not be surprised to see them soon take their place among the most fashionable flowers.

To Hit the Mark.—Whether the target we aim at is a target which stands still, or a living creature which is doing its best to get away, there is no use in trying to do accurate work with inferior weapons. In the guns of J. Stevens & Co. we find the most superior workmanship and the most excellent methods of construction. Whether for purposes of marksmanship or for taking game successfully, these arms are all that can be desired. The most experienced sportsmen testify with pleasure the high estimation in which they hold these weapons. The prices of the J. Stevens & Co. arms will be found acceptable to all who know how to appreciate a good article of gun or pistol. Their Illustrated Price List is mailed, post-paid, upon application.

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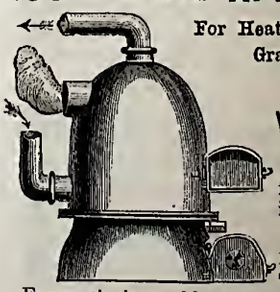

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P. *"Curiosity,"* a new early flowering *Pompon Chrysanthemum*, with brilliant, deep-bright crimson flowers tipped with golden yellow. This choice variety just introduced here is not for sale, but is offered only as a present to our subscribers.

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"Stop him! Stop him! Oho! Hey! Hey!"
A spirited horse is running away!
Galloping, scampering, frightfully fast,
The terrified animal dashes past
Through a throng of busy men and boys,—
Oh! The grim confusion! The horrible noise!
As they scream and scatter in great dismay,
And try their best to get out of the way.
The runaway's gone in a moment;—and then
There are left in his track two wounded men.
ONE, with a ghastly gash in his head,
Groans for a moment;—and lo! he's dead.
Never had he been the least afraid
Of sudden disaster! nor ever made,
For innocent babes or delicate wife,
Provision, in case he should lose his life.
There is grief in the home that once was bright;
There are darkness and gloom instead of light;
For the sorrowing mother of infants small
Is left a widow, with nothing at all.
THE OTHER, with badly broken bones,
Is roughly dashed on the paving stones.
They carry him home and put him to bed,
And the doctor gravely shakes his head
As he says, "My friend, it's a narrow escape;
"I find you in terribly battered shape.
"I hope we'll be able to pull you through,
"But you'll stay in bed for a month or two."
And though he is suffering all the while,
His face is wreathed with a pleasant smile,
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CHRISTMAS DAY! At the well spread table
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And he tells of the awful crash, that day
That the terrified animal ran away,
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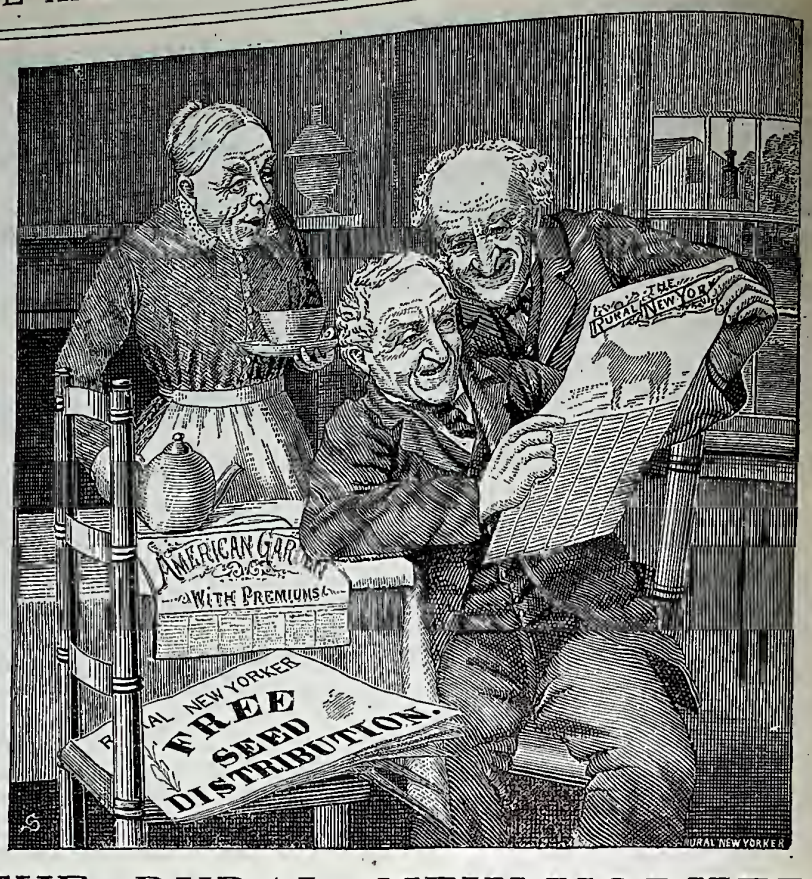

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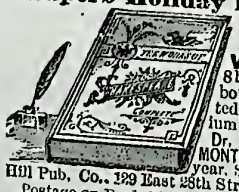

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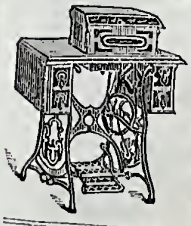

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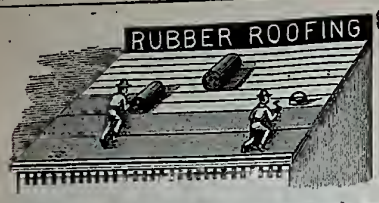

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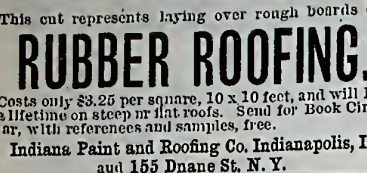

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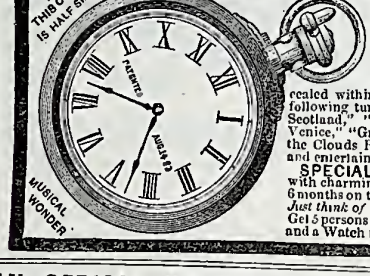

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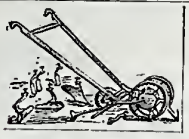

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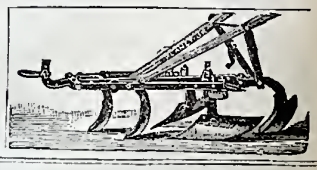

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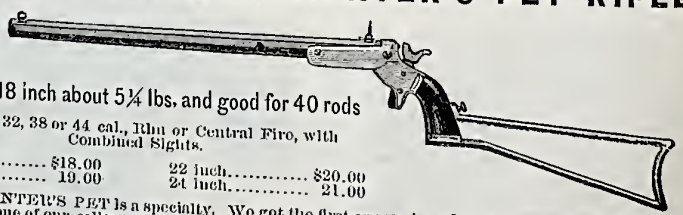

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We have, among hundreds of testimonials, a letter from Geo. M. Bissell, of Owasco, N. Y., which will appear with this advertisement when it comes out next time. In substance he states that he was not allowed to use an 18-inch, 32-calibre, at turkeys at 65 rods, and actually hit them at 75 rods; and that before he was ruled out his little rifle took fifteen out of twenty-five turkeys that were shot at. Was this an accident? By no means; it merely proved him to be a skillful marksman with a perfect weapon. When he was first shown the "PET" and told how well it would shoot, he seemed as incredulous as he would have been had he been told that it would shoot ten miles; and on actual test was required to convince him of the facts. All the "STEVENS" arms have very strong points of excellence. They are made for every-day folks, and at a price within the reach of all; require no fixings at all, and no previous knowledge of arms; no special cartridges. A boy ten years old can manage them with perfect ease, and become in a short time an expert shot.

SEND FOR ILLUSTRATED PRICE-LIST OF FIRE-ARMS.

J. STEVENS & CO.

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VOL. XX 1884

DEMOREST'S MONTHLY MAGAZINE

ILLUSTRATED WITH Original Steel Engravings, Photogravures & Oil Pictures.

$2 $2

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WEEKLY CINCINNATI TIMES

A large eight page paper of fifty-six columns. It is the oldest, most readable, and best weekly paper published; and with the "ILLUSTRATED HAND-BOOK," a publication of great value to every person, costs but ONE DOLLAR A YEAR.

It is adapted to every locality. Send for Specimen copy. Address, THE TIMES, CINCINNATI, OHIO.

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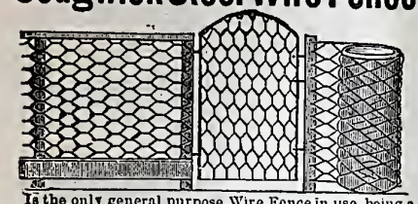

Is the only general purpose Wire Fence in use, being a Strong Net-Work Without Barbs. It will turn dogs, pigs, sheep, and poultry, as well as the most vicious stock, without injury to either fence or stock. It is just the fence for farms, gardens, stock ranges and railroads, and very neat for lawns, parks, school lots and cemeteries. Covered with rust-proof paint (or galvanized) it will last a life-time. It is Superior to Boards or Barbed Wire in every respect. We ask for it a fair trial, knowing it will wear itself into favor. The Sedgwick Gates, made of wrought-iron pipe and steel wire, defy all competition in neatness, strength and durability. We also make the best and cheapest All Iron Automatic or Self-Opening Gate, also Cheapest and Neatest All Iron Fence. For Prices and Particulars ask Hardware Dealers or address the Manufacturers,

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SPECIMENS of the combinations referred to are: THE CONTINENT, with The Century, $5.98; with Harper's Magazine, $5.57; with Harper's Bazar or Weekly, $5.98; with THE AMERICAN GARDEN, $4.03; with The Century *and* Harper's Magazine, $9.20; and so on. Send us your list for estimate.

THE CONTINENT, 23 Park Row, New-York.

Remarkable Potato Yields from the Mapes Manures.

PROTECTION FROM SCABBINESS, ROT, ETC. PERMANENT IMPROVEMENT TO THE SOIL.

Increase your supply of farm manures by adding the Mapes Potato and other Special Crop Manures.

SUPERIORITY OF POTATO CROPS GROWN WITH THE MAPES POTATO MANURE.

684 Bushels of Potatoes on less than one acre.

ALFRED ROSE, Penn Yan, Yates County, N. Y., reports on Potatoes: "Eximius," on one measured acre, 61 rows. After Potatoes were up, 4 rows entire were carried off by a flood, reducing the yield proportionately.

10 cords barnyard manure broadcast, 200 lbs. Mapes Potato " " 300 " " " " in the drills, 200 " " " " at hoeing,	684 bushels from the 57 rows (4 rows short of an acre). Quality very superior, bright, smooth, very large, and uniform.

ALFRED ROSE, Penn Yan, N. Y., reports also on other varieties as follows:

100 hills of each, experimentally, same fertilizing as with the above.

"Invincible".....at rate of 960 bushels per acre.
"Rocky Mountain Rose"..... " 948½ " "
"Eximius"..... " 846 " "

When the Mapes Potato Manure was omitted, the yield was decreased on the several varieties 200 to 220 bushels per acre. Mr. Rose writes: "There is a great difference (in yield) in favor of the Mapes Potato Manure, also in FINER QUALITY and SMOOTHER potatoes."

355 bushels Potatoes on one acre (second application of the Mapes Potato Manure when plants 5 inches high).

240 bushels Potatoes per acre on balance of field (20 acres)—only the Mapes Manure used on the entire piece.

DR. W. S. COMBS, Freehold, Monmouth County, N. J., Oct. 6th, 1883, writes:

"The potatoes (Mammoth Pearl) were planted from 20th to 25th of April on ordinary clay soil, and were fertilized with the 'MAPES POTATO MANURE' at the rate of one-half ton per acre. Nothing else was applied. The Potato Manure was used *one-half in the row and half broadcast.* As near as I can estimate, the average yield was about 240 bushels per acre. I have one acre to which, when the plants were five inches high, I applied another dressing of fertilizer and worked it in. This acre I had *accurately measured* and the potatoes from it *weighed;* the result *was 355 bushels on the acre.* The field is now sown with wheat—*no manure or fertilizer* being used."

See pamphlet for history of ten-acre field, by Dr. W. S. COMBS, since 1878. Crops (Potatoes, Corn, Oats, Wheat, and Grass) LARGELY INCREASED. Wheat crop (1878), 200 bushels on 10 acres, increased in 1882 to 400 BUSHELS OF WHEAT, same variety (Fultz) on SAME FIELD of 10 acres. Land in GREATLY IMPROVED CONDITION AFTER HEAVY CROPPING DURING SEVERAL SUCCESSIVE SEASONS. Nothing but the Mapes Manures used.

CROP OF POTATOES ("EARLY ROSE") NEARLY RUINED BY WIRE-WORMS WHERE 40 LOADS PER ACRE OF STABLE MANURE WERE USED—YIELD 120 BUSHELS PER ACRE, AND *ONE-HALF FIT FOR SALE.*

WITH 400 LBS. OF THE MAPES POTATO MANURE PER ACRE, CROP *"NOT TOUCHED BY THE WORMS ENOUGH TO HURT"*—YIELD AT RATE OF 450 BUSHELS OF POTATOES.

HENRY STEWART, Hackensack, Bergen County, N. J., writes:—August 28th, 1883.

I have just been digging some of my Potatoes (Early Rose) and send you samples. The clean large one is a fair specimen of some rows manured with THE MAPES POTATO MANURE; 80 feet of row manured with the fertilizer produced one barrel, 2½ bushels. As the rows were 3 feet apart, the yield is equal to 180 barrels or **450 bushels** per acre. The other potato is a fair specimen of those grown with cow and hen manure, yielding a barrel of fair potatoes to 300 feet of row, equal to **120 bushels** per acre. A large quantity, quite a half of this part of the crop, was *completely destroyed* by wire-worms, and not more than half those saved would be fit for sale. Not a potato, of those grown with the fertilizer alone, is touched by the worms enough to hurt it. I used 10 loads of manure to a quarter of an acre and 50 lbs. of the fertilizer to one-eighth of an acre.

Send postal for forthcoming pamphlet, containing reports from practical, well-known TRUCK, FRUIT, AND SPECIAL CROP GROWERS. Many of these growers use twenty tons and upward of the Mapes Manures in a season. Address

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UNEQUALLED IN
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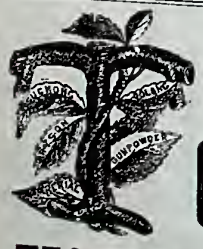

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"ACME" PULVERIZING HARROW, Clod Crusher, and Leveler.

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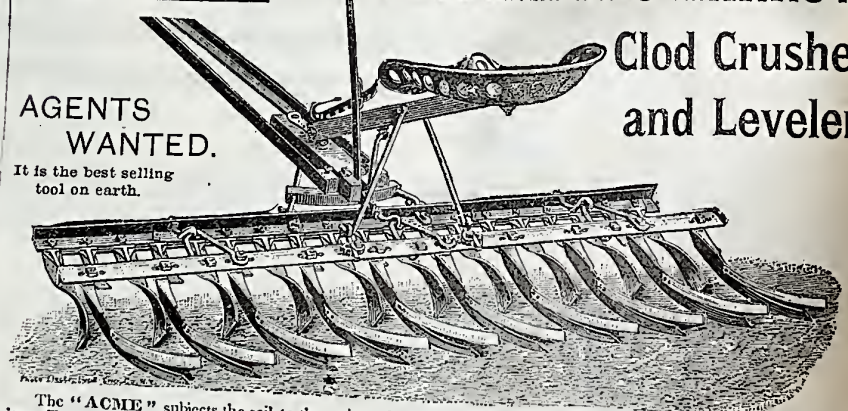
It is the best selling tool on earth.



The "ACME" subjects the soil to the action of a Steel Crusher and Leveler, and to the **Cutting, Lifting, Turning** process of *double gangs* of **CAST-STEEL COULTERS,** the peculiar shape and arrangement of which give **immense cutting power.** Thus the three operations of crushing lumps, **leveling** off the ground, and thoroughly **pulverizing** the soil are **performed at the same time.** The **entire absence of Spikes or Spring Teeth** avoids pulling up rubbish. It is **especially adapted** to inverted sod and hard clay, where other Harrows utterly fail; works perfectly on light soil, and is the only Harrow that **cuts over the entire surface** of the ground.

We make a variety of Sizes working from 4 to 15 Feet Wide.

DO NOT BE DECEIVED. Don't let your dealer palm off a base imitation or some inferior tool on you under the assurance that it is something better, but **SATISFY YOURSELF BY ORDERING AN "ACME" ON TRIAL.** We will send the *double gang* Acme to any responsible farmer in the United States on trial, and if it does not suit, you may send it back, we paying return freight charges. We don't ask for pay until you have tried it on your own farm.

Send for Pamphlet containing Thousands of Testimonials, from 46 different States and Territories.

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Pocket Cutlery, by Mail, Post-paid.

Knives, like cut, Ivory handle, 50 cents; Pearl handle, 75 cts.; 3 blades, Pearl handle, $1.00; every Lady should have one, as they are well suited for all purposes, being well made of the very best quality of steel, and **Warranted.**

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, FEBRUARY, 1884. No. 2.

ABOUT OURSELVES.

Thanks to the kind efforts of our friends, a large number of new subscribers has been added to our subscription list. To prove to these, as well as to our old friends, that we are not unmindful of their confidence, shall be our earnest aim. We have always endeavored to make THE AMERICAN GARDEN worthy of the general commendation it has received, and shall, during the present year, spare no efforts to maintain its high position among its contemporaries.

As far as the mechanical part,—paper, types, printing, illustrations, and the general artistic execution,—are concerned, it would be difficult to suggest improvement. Among our regular contributors are many of the foremost practical horticulturists and most accomplished writers of the country; and, in our editorial work, the results of a life-long study of the sciences relating to the cultivation of the soil, as well as constant and practical experience in all branches of horticulture, are made subservient to the interests of our readers.

There is a department, however, in which, we think, there is room for improvement, and to accomplish this we need the assistance of our friends. It is the interchange of the opinions and experiences of its readers through which alone a journal can be brought to the highest degree of usefulness. However well informed an editor may be, no one fit for the position is vain enough to believe that he knows more than all his readers. The more carefully he studies their needs and consults their preferences, the more valuable can he make his paper to them.

Many of our readers have, no doubt, given particular attention to the cultivation of certain classes of flowers, fruits, or vegetables, and have learned special methods of treatment not familiar to others. In a few minutes of time the essence of such knowledge may often be condensed upon a postal card, and, if mailed to us, made serviceable to thousands. It is, of course, impossible to publish all communications received; but every suggestion, every item of information, helps and adds to the general improvement and practical value of the paper.

THE BLUE SPRUCE IN PROF. SARGENT'S GARDEN, NEAR BOSTON.

(For description, see page 30.)

OPEN ACCOUNTS.

THE AMERICAN GARDEN does *not* keep open accounts with its subscribers. When a subscription expires the paper is invariably discontinued, and it is impossible to make even a single exception to this rule. This is not from any lack of confidence in our subscribers, or fear that they would not pay what they owe, but from absolute necessity. To keep a debit and credit account for every subscriber and collect outstanding bills would cost more than the profits of the publication amount to. We would much prefer not to publish a paper at all than to adopt so ruinous a policy.

NO MISTAKE.

It is *not* by *mistake* that subscribers receive occasionally more than one copy of the paper. To those of our readers who we have reason to believe take an interest in THE AMERICAN GARDEN, we send sometimes an extra copy in the hope that they may hand it to some of their horticultural friends, that they may speak a kind word for us, and induce them to subscribe also.

A BEAUTIFUL COLORED PLATE.

With our March number we shall present to every subscriber for 1884 a beautiful colored plate of Pansies. This will be the most life-like and artistic plate of its kind ever published, and is considered by competent artists a masterwork of color-printing. For framing it is easily worth a year's subscription to THE AMERICAN GARDEN.

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The Vegetable Garden.

SEASONABLE HINTS.

To make these brief notes and timely suggestions applicable to the needs of the largest number of our readers forms generally one of the most perplexing parts of editorial work. The enormous extent of our country, reaching from the borders of the arctic region to within but a few degrees of the tropic zone, makes it impossible to give directions suited alike to all climates. While as we write these lines a fierce snow-storm pelts against our windows and all vegetation is at rest under the snowy down, some of our readers may be picking Strawberries and green Peas. It will therefore be readily perceived that, as those items of information are mainly taken from our own personal observation and experience, we have to confine ourselves, in some measure, to the latitude of New-York City. Yet, with slight modifications, according to the variations of climate, beginners in gardening anywhere may find in these columns many helpful hints.

Mistaken Economy.—The most short-sighted and poorest economy a gardener or farmer can pursue is to sow poor or doubtful seeds. While there is yet plenty of time to make tests, and to procure good seeds in case those on hand prove worthless, no one should neglect to make sure of having only first-class stock when spring-time and garden-work begin. The losses and disappointments which frequently result from sowing poor seeds are far greater than can be computed in dollars and cents. It would be about as judicious for an engineer to run a passenger train over an unsound railroad bridge, as for a gardener to trust to the chances of raising a profitable crop from doubtful seed.

Testing Seeds.—No reputable seed house will knowingly send out seeds of doubtful germinating quality, and the testing of the stock of seed before sending any out is now customary in all first-class seed houses. The risk of getting poor seed in this way is extremely small. Old seeds kept over from previous seasons, however, should always be tested before sowing. Where window plants are kept, the easiest way is to sow a few of the seeds around the plants in the pots, where they will soon sprout and the percentage of germination may be easily ascertained. Melons, Cucumbers, Corn, Peppers, Egg-plants, and all kinds requiring a high temperature, should be sown in pots or boxes set in a warm place, or they may be scattered between flannel kept constantly moist and warm.

The Duration of Vitality varies considerably in different kinds of seeds. While some have to be sown immediately after maturity, others retain their vitality for an almost indefinite period. But it should be borne in mind that although old seeds may germinate, in the majority of cases they will not produce as strong and healthy plants as fresh seeds.

Beans, Carrots, Celery, Corn, Onions, Spinach, may be relied upon for two to three years; Beets, Lettuce, Turnips, Tomatoes, for three to four years; Peas, Radish, Cabbage, for four to six years; Cucumbers, Melons, Squashes, and similar seeds, will germinate after ten years and more.

WINTER CULTURE OF VEGETABLES.

My experience in forcing vegetables, in a small greenhouse of four hundred square feet of glass, shows that there is not much difficulty nor great expense in securing a continuous supply for profit as well as for home use, and so far the success has been quite flattering.

The benches which hold the soil are five feet wide and six inches deep, and the path is in the center. The soil has been used for hot-beds and is rich in vegetable mold. It has not been renewed in the three seasons it has been used, as there seemed no need of it. I have a few flowering plants in the house all the time, the temperature is, therefore, often too warm and close for Lettuce, so that the plants set out the first of October do not as well as they would under more favorable conditions, but it occupies the bench till January, when it is cut and sold for what it will bring. This is the first crop, on one side.

The other side is set out September first, to Parsley roots, in rows, five inches apart, and one inch or two between the plants. The soil is well soaked with water at the time of setting the roots, which grow vigorously and give a cutting about Thanksgiving, and continue to grow till the first of April, when they begin to run to seed, yielding about four cuttings during the winter. The roots are removed from the benches in time to give room to flowering plants which have been potted from cuttings and are ready for sale in May and June. The Parsley yields about $3 per sash, on a space 3x5 feet.

After the Lettuce is off in January, I set out half-grown Celery plants, Water Cress, and Dandelion roots, on the bench in its place. The Celery gives green leaves for "soup bunches" from February to April, and yields as much profit as the Parsley per glass. The Water Cress, propagated from a few cuttings brought in in the Fall, gives an equal return; two-thirds of the bench has Dandelion roots set thickly in rows five inches apart; these are ready to cut in four weeks from the time of setting, and sell for $1.25 per glass. The Celery, Dandelion, and Parsley roots are raised the summer before, and preserved in what I call my "winter house," till the time needed. As soon as the Dandelions are pulled, the bench is sowed to French Breakfast Radishes, which come on and are harvested after six weeks, yielding the same as the Dandelion, $1.25 per glass.

After this the space is occupied by Celery, Celeriac, Leeks, Parsley, different kinds of Cabbages, Kohlrabi, and Cauliflower, all sown in flats, besides Lettuce, Tomatoes, Peppers, and so on. During mild days of April, the Lettuce, Cabbage, and all plants that need hardening are crowded outside and brought back at night, and as the weather grows milder, left out altogether. Tomatoes, Peppers, and Celery, as they become crowded, are pricked out into the spaces made vacant by the hardier plants, so that, on the first of May, the house is as full as at any time.

As fertilizer, I have used fine horse manure, and have had good crops. This was well dug into the soil twice during the winter, and by keeping it well aired, watered, and heated, have had no trouble with anything but Lettuce.

I have also raised Endive on the benches instead of Lettuce; but the house being too hot, the leaves did not bleach readily, and the experiment cannot be called a success. Onion "sets," set out, do fairly well; Chives nicely. Spring Lettuce, I raise in hot-beds outside, and have always good success, as more air and more room can be given. Lettuce wants a cool head and warm feet.

All this is on a small scale; but it pays well in proportion to the money invested, as myself or some member of the family does all the work.

W. H. BULL.

EARLY POTATOES.

When it is desired to produce a crop as early as possible, I find nothing more serviceable than an application of fresh stable manure in the hill.

The soil should be worked into good condition by plowing and harrowing. I lay it off in rows three and a half feet apart, by furrowing with a good-sized double shovel plow, so as to make a rather deep furrow. Into the bottom of this furrow apply fresh stable manure, a reasonably strong dressing; on this drop the Potatoes, two sets in a hill, and the hills eighteen inches apart. I find it good policy to cut the sets at least two or three days before planting.

After the Potatoes are dropped, cover with a hoe at least three inches deep, stepping upon the soil, so as to press it firmly down upon the Potatoes.

The fresh manure seems to help considerably about keeping out the frost, and the Potatoes grow right along. In this way Potatoes can be planted a week or two earlier than by the usual plan.

I am always careful to use only good seed, and especially when I want good early Potatoes. Although, with everything favorable, you may sometimes raise a good crop from poor seed, yet this is only the case when the general crop has been plentiful and the prices are low; while, by using only the best of seed, giving it good soil to grow in and good, clean cultivation, you are reasonably sure of a good crop when others fail; and as you then receive a higher price, the result is more profitable.

Potato-land should be plowed deep and well. A black, sandy loam is preferable to any other soil, as it is loose and retains moisture well, is easily cultivated, and produces clean, smooth Potatoes.

N. J. SHEPHERD.

ONIONS WITHOUT LABOR.

Impressed with the desirability of having an early bed of Onions, enough for summer use and a few bushels to winter over, and in view of the fact that it is no easy task to weed and care for a bed of Onions, as they are usually raised, the Germantown *Telegraph* advises the following method by which weeding is entirely dispensed with:

Prepare a bed, say sixteen foot square, of proper fertility, cultivate deep, rake it smooth and fine; now lay on a board, about one foot wide, at one side of your bed, stand on the board, and place your sets close to the edge, say four inches apart, the entire length of the board; now lay down another board, one and one-half inches from the other, place your sets as before, and proceed thus on till the bed is completed. Leave on the boards until the Onions have matured. Thus you will have a nice bed of Onions without labor, save the preparing of the bed and the placing of the sets.

RHUBARB CULTURE.

Rhubarb, like Currant bushes, will grow almost anywhere and under any treatment, and consequently receives more ill usage than any other "green thing growing." But for this reason it should not be supposed that when growing under neglect and abuse it will do its best and produce as abundant crops and of equally good quality as when good treatment is given.

After it is once planted, Rhubarb requires little cultivation, but it must have at all times deep, rich soil, the richer the better. In field culture, the roots are planted about four feet apart each way, and cultivated like any hoed crop. In the family garden, they should be planted two to three feet apart, in a single row, at least four feet distant from other plants.

It may be raised from seed, but as there is little reliance in the seedlings being of the same variety as the parent plants, division of the roots is the method of propagation usually adopted. Any piece of root with a bud or crown will grow if planted about two inches deep in mellow soil firmly pressed around it. Roots may be planted in autumn or early spring. Plantations are usually renewed every four or five years, yet when a liberal dressing of manure is given every fall, the roots will produce a crop for an almost indefinite period. Heavy manuring, clean cultivation, and liberal space are the essential requisites for raising large, succulent Rhubarb. The varieties best known are:

Linnæus, grown extensively for market as well as home use. It is early, very productive, and of a brisk, spicy flavor. Its principal fault is that it seeds so freely that unless all flower stalks are cut off as soon as they appear, the crop deteriorates rapidly.

Victoria is later, has larger leaves and stalks, and requires very rich, rather heavy ground for its best development.

Paragon. This is a new variety, originated in England, and now introduced here. We grew it last year alongside of the older kinds, and were so favorably impressed with its superiority that we give herewith an accurate, much reduced illustration of a clump of roots and leaves. The stalks are bright red, very heavy, and produced in quick succession and wonderful abundance. It is earlier, of more delicate flavor, and decidedly less acid than any other variety we are acquainted with. But its most remarkable and most valuable qualification is that it does not produce flower stalks, to which fact its great productiveness is mainly attributable, all the strength of the plant being used for the development of its leaves. The habit of the plant is remarkably compact, so that plantations do not require to be renewed every few years, while the clumps nevertheless retain their original position. To judge from the high praise this variety has received in England, as well as from our own experience in growing it, we do not doubt that, when generally known, it will be largely planted in preference to the older kinds.

EARLY "PARAGON" RHUBARB.

THE BEST TOMATOES.

In a test of fifty-five Tomatoes grown by Josiah Hoopes, and reported by him to the *New-York Tribune*, he favored Livingston's Perfection and Favorite as especially deserving of praise. The fruit was large and solid, not cracking, and very even croppers. The Trophy held its own nobly. Among the early varieties, the Mayflower was a decided improvement on the Acme. Beauty was large, solid, and of brilliant scarlet color.

Among the yellow varieties, the Golden Trophy proved the best in the entire list. In fact, it was not excelled in the whole collection for evenness of outline, solidity, fine flavor, and productiveness. When fully ripe, it has a rich golden tint, and when sliced raw, it makes a very ornamental dish.

The Fruit Garden.

SEASONABLE HINTS.

Spring Protection.—There is a great deal said about winter protection of Strawberry and other plants, while the importance of spring protection is but rarely considered. During the severest part of winter, when snow covers the land and the soil remains frozen solid for some months in succession, there is little danger for the plants. The critical period comes toward the end of February and in March, when the increasing warmth of the sun's rays thaws the ground in day-time to freeze again during the night following.

Strawberry Beds should therefore be examined carefully as soon as free from snow. Wherever the mulching material has been carried away by winds, it should be replaced at once. Plants not covered previously will be materially benefited by mulching at this season, especially on heavy and wet soils. A few hours' time spent for this purpose may make all the difference between a plentiful crop and no berries at all.

Scraping of Fruit Trees is often carried to excess. A healthy, vigorous tree does not require to be scraped at all; it needs all its natural bark for protection against the cold, drying winds of winter, and against the parching sun of summer, as much so as birds need their feathers and wild beasts their fur. The superfluous scaly part of the bark of a healthy tree is continually thrown off by its own expansion. Yet when trees become feeble and sickly, and their trunks and branches overgrown with moss and lichens, a general scraping and washing may become serviceable, not only for the destruction of these parasites, but also to expose and destroy the hiding places of the legions of injurious insects which make their winter homes and deposit their eggs under this dead and decaying matter.

How to Scrape a Tree.—As trees are generally scraped, more harm than good results from the operation. Great care should always be taken not to disturb or injure the lower and living part of the bark. There is an instrument, a "tree-scraper," made for this purpose, but a common mason's trowel or a short-handled hoe answers the purpose fully as well.

Washes for Fruit Trees.—Ordinary whitewash, as frequently used, has very little effect except to disfigure the trees. To destroy the insects and eggs hidden in the crevices of the trees very much stronger applications have to be used. Soft-soap reduced to the consistence of a thick paint, with the addition of a strong solution of washing soda, makes one of the most effective and most lasting washes. A solution of one pound of commercial potash, in from two to four gallons of water, is also very good.

Petroleum Emulsions as insecticides, especially for the destruction of scale insects, have recently, through the investigations of *Prof. C. V. Riley*, been brought to prominence. After a long series of experiments with a great many substances, milk was found not only the most available but also one of the very best substances for the production of petroleum emulsions.

A GRAPE ELECTION.

To select a limited number of the best varieties of Grapes or any other fruits, is not so easy a matter as may be supposed at a first glance. Each variety has some peculiarities which may make it more suitable for certain localities than others, which fact explains the diversity of opinions, even among those most competent to judge.

The discussion on this subject, at the recent session of the New Jersey State Horticultural Society at Camden, was of unusual interest. Of special value may be considered the result of a Grape election taken in answer to the following question:

"Which are the six best and most desirable varieties of Grapes for home use and general culture—two black, two red, two white—quality, hardiness, and general healthiness considered?"

The result of the vote was as follows:

Black—*Concord, Worden.*

Red—*Brighton, Jefferson.*

White—*Pocklington, Duchess.*

Although there were about two hundred persons present at the meeting, only twenty-three voted; but as among these were nearly all the most prominent and most experienced fruit-growers of the State, this list may well be considered the most judicious and reliable selection that could be obtained from any source.

The highest number of votes, regardless of the color of the fruit, was given to the Brighton, which received 20 of the twenty-three votes cast; Concord received 16; Worden, 14; Pocklington, 13; Duchess, 12; Moore's Early, 11; Jefferson, 7; Delaware, 6; Lady Washington, 5; Lady, 4; Martha, 3; Prentiss and Wilder, each, 2; Champion and Herbert, each, 1.

GRAPE PRUNING.

Grape-vines that have not already been pruned should now receive attention, and how to do it is a question on which there are a great variety of opinions. Occasionally we find a person who opposes pruning altogether, as being contrary to nature, and who is satisfied with results obtained from this let-alone system; but the great majority of professional and amateur grape growers believe in pruning, and pruning close too, and find a profit and satisfaction in doing so.

The novice who is not versed in this matter should remember that this year's fruit is borne on canes of this year's growth, but the buds producing them are to be found on the young wood of last year. It is very seldom that a bud starting from old wood will produce fruit the same season; such growth, therefore, is only of use for renewing old wood and laying the foundation for a crop of fruit the next season. It should also be borne in mind that the tendency of the sap is to the extremity, and that the strongest and most vigorous canes are generally to be found there.

For instance, if you will examine a cane that was cut to three or four feet last winter, you will find the end buds have grown the strongest, and generally the buds nearer the old wood started feebly and, failing to ripen, are now dead because the sap rushed past them to the buds beyond; and thus it is that the longer you prune the farther you have to go for your fruit every year. By short pruning you confine your fruit nearer to the trunk of the vines. After your vines have once reached the limits desired, it is easy to keep them there.

Some judgment is also needed to prevent too thick a mass of shoots at any one point, which is apt to occur on old vines where a cluster of young shoots have been allowed to grow. With such vines, spur pruning to two buds is generally practiced, and not more than two spurs should be allowed at one point. These will make four shoots and set two or three bunches each, and a little study and thought will enable the operator to judge how the vine will look after growth. Care should also be taken not to overload the vines by imposing too great a burden on them. Probably there is no more prolific source of failure and dissatisfaction in Grape growing than this overcropping, or one more generally prevalent, even among professional Grape growers. An overtaxed vine fails to ripen its fruit, and becomes an easy prey to the attacks of mildew and rot. It is not an easy task to judge with accuracy just the amount of fruit a vine will produce and ripen without injury. It is far better to give a vine too little than too much to do, which rule will apply to other things as well.

Where shade is of paramount importance to fruit, longer pruning may be justified, but it is possible to secure both results by short pruning, and where extra fine clusters are desired, summer pruning and even thinning of the clusters is necessary. Summer pruning should also include the rubbing off of any superfluous buds that may start out on the body of the vines. Bear in mind also that the largest and strongest shoots are not the best for fruit. A glance at the buds on a slower-grown but well ripened cane will show round, full, well developed buds, that are better for fruiting than the smaller and pointed ones to be found on extra large canes.

E. WILLIAMS.

CRYSTALLIZED FRUIT.

New industries are constantly springing up in California as if by magic. Among the latest is that of Crystallized Fruits. These fruits, for which there is a large sale in our principal cities, were heretofore all imported from France, and the honor of establishing the first factory for their production belongs to Messrs Bernard & Benedict of Los Angeles. The process practiced by the firm is, according to a correspondent of the *Los Angeles Herald*, as follows:

"The fruit, whether White Figs, Black Figs, Oranges, Pears, Peaches, or other fruits,—those being the principal ones used,—is first relieved of its skin and sliced, after which it is placed in trays to dry a little. Next, they are dipped in water in which sugar is dissolved, then placed on trays of wire gauze, and put in the place where they are dried and become crystallized. It takes two or three days to complete the process, as the fruits are subjected to a slow heat in order to make them as nearly perfect as possible. The drying apparatus is heated by coal-oil stoves in zinc partitions underneath, by which the heat is thoroughly regulated. At present 1000 pounds of marmalade and crystallized fruit are shipped daily to various points, but the establishment is capable of producing 5000 pounds daily."

TUBEROUS-ROOTED GRAPE-VINES.

There seems to be little doubt that the tuberous vines recently discovered in the French colony of Cochin China are, if not identical, very nearly allied to those found a few years ago in Soudan in Africa. Both have thick, tuberous roots, from which the stems are thrown up annually, dying down in winter, or the dry season.

Last summer we received, *via* California, a few seeds of the Cochin China kind. These were sown in pots in a frame, and required a long time and very high temperature to make them germinate. Finally, we succeeded in raising half a dozen plants, but they did not grow over three to four inches in height, producing three to four glossy leaves of about the shape and appearance of the Clinton Grape, when suddenly they damped off without any apparent cause. The bulbs produced are so minute that we have but little hope to be able to preserve them in a condition to start again in spring. Yet we shall give them all possible care, as few new plants have excited our curiosity as much as these singular vines. If any of our readers have had experience with them, we should be very glad to learn the results.

It is doubtful whether they can be cultivated anywhere in the United States, except perhaps in Florida; but for warmer climates they may yet become of great importance. In its native country the vigor of the plant seems almost incredible. Mr. M. Martin, the discoverer, says:

"I found these vines for the first time in the forests of Mais. Some of them attained a height of fifty feet, and were completely covered with Grapes from top to bottom. A single vine will yield two hundred pounds of Grapes—not in a general way, of course; but I have found plants which gave that amount; and some of the bunches weighed eight pounds."

Our illustration,—for which we are indebted to the *London Garden*,—reduced to about one-third of the natural size, shows well the general habit of the bunches.

FRUIT OF THE TUBEROUS-ROOTED GRAPE-VINE.
(One-third natural size.)

The berries are of the size of our medium Grapes, and are found both red and white. The white are said to be "soft and of agreeable flavor," the red "rough." But their principal value will be for wine-making. So far, wine has only been made from them in a crude manner, and this is described as "of fine color, but green, and of but one degree lighter than that made from cultivated Grapes."

FRUIT TREES BY THE LINE FENCE.

Although the laws on this subject vary somewhat in different States, the following, according to a prominent lawyer of this city, covers the main points:

If the stem or trunk of the tree grows so close to the line that part of its actual body extends into the land of each, neither owner can cut it down without the consent of the other, and the fruit is to be equitably divided. If the stem of the tree stands wholly within the boundary line of one owner, he owns the whole of the tree with its products, although the roots and branches extend into the property of another. The law gives the landowner on whose soil the tree stands the right to cut it down, and to pluck all the fruit from it while it stands.

In New-York State the courts have decided that trespass or assault would lie by the owner of the land over which its branches extend, if he prevented the owner of the tree, by personal violence, from reaching over and picking the fruit growing upon these branches while standing on the fence dividing the lands. The owner of the land over which the branches extend may lop the branches close to his line. He may also dig down and cut the roots square with his line.

ORCHARD NOTES.

Ten years ago I thought spring the only proper season for pruning, but now I am just as firmly convinced that fall or winter is as good. Each year I do less and less pruning, because I prune the young tree mercilessly when I transplant it from the nursery to the orchard, and as a result find very little after-pruning necessary. I think this is an important point in orcharding, more so than is generally supposed. Shaping the top when transplanting, avoids the cutting of limbs when they have become large, and the consequent formation of large scars; and at the time of transplanting, and for some time afterward, the roots are not capable of nourishing a top as large as when growing in the nursery. The tops of trees planted in the spring should receive their final shaping in the fall. After that, all that I do is to cut out "water shoots," dead limbs, and limbs that interfere with one another.

I use for covering scars a wax made of tallow, resin, and beeswax. But I have found paint as good as any wax. I use linseed oil and mineral paint, which is cheap. Make the paint very thick, and give the scars two heavy coats.

Another error which I firmly believed in was that the ground of a young orchard should be cultivated, and while my Apple and Peach orchards were young, I kept the ground in hoed crops. But when the trees grew larger, and cast so much shade that good crops could not be grown on a considerable part of the land, I sowed both orchards in grass and clover, and in grass and clover they have remained unto this day. A few trees die out each year, and I immediately grub them up, and supply their places with trees from the nursery. It thus happens that I have trees of all ages less than thirty years growing in the orchards, and I am certain they are fully as thrifty and healthy now among the grass as the young trees were when the ground was cultivated.

I still think, however, that it is better to cultivate the land of an orchard than to neglect it altogether. But I make a hog pasture of my orchards, because I have found doing so beneficial to both orchards and hogs. The enemies of the trees seem no more numerous now than when the ground was stirred. I do not allow the grass to grow within a couple of feet of the trunks of the trees.

In quite a number of places, especially on the prairies, the rabbits occasion the orchardist considerable trouble, expense, and vexatious delay, by girdling the young trees. They confine their depredatious on the young orchard to the winter months, when green vegetable food is scarce, and they are always the worst when snow is on the ground, as then they find it quite troublesome to get clover. For years I tried every preventive I heard of, but found none valuable, and had about come to the conclusion that the only really efficacious preventive was a vigorous and incessant use of the shot-gun, when some one told me to smear the trunks of the young trees with hog's liver, as far up as the rabbits could reach. I have faithfully tested this for several years now, and can say that a rabbit will not touch a tree that has been coated with it. I have not tried other liver, but suppose the liver of cattle or sheep would answer equally as well.

I am not certain but anything greasy or smelling of blood would answer. I wash the liver off the next spring with soap-suds saved from washing, using an old broom, and scrubbing the trunks and larger limbs thoroughly. But then I would do this whether there was liver on the trees or not. The keeping the trunks of fruit trees clean promotes their health, and is a good preventive against the depredations of many injurious insects.

JOHN M. STAHL.

The Flower Garden.

WHO SETS THE FASHIONS?

Who sets the fashions, I'd like to know,
For the little people beneath the snow?
And are they working a weary while,
To dress themselves in the latest style?

There's Mrs. Primrose, who used to be
The very picture of modesty.
Plain were her dresses, but now she goes
With cramps and fringes and furbelows.

And even Miss Buttercup puts on airs,
Because the color in vogue she wears;
And as for Dandelion, dear me!
A vainer creature you ne'er will see.

When Mrs. Poppy—that dreadful flirt—
Was younger, she wore but one plain skirt;
But now I notice, with great surprise,
She's several patterns of largest size.

The Fuchsia sisters—those lovely belles!—
Improve their styles as the mode compels;
And though everybody is loud in their praise,
They ne'er depart from their modest ways.

And the Pansy family must have found
Queen Elizabeth's wardrobe under-ground.
For in velvets and satins of every shade
Throughout the season they're all arrayed.

Pinks and Daisies and all the flowers
Change their fashion, as we change ours;
And those who knew in olden days
Are mystified by their modern ways.

Who sets the fashions, I'd like to know,
For the little people beneath the snow?
And are they busy a weary while
Dressing themselves in the latest style?

New-York Independent.

SEASONABLE HINTS.

It is hardly to be supposed that any of our regular readers do not have at least a few flowers about their homes in summer; but among those who see THE AMERICAN GARDEN for the first time today, there may be some who share the common error that the raising of flowers is necessarily expensive and laborious. To maintain extensive green-houses and elaborate lawns cost, of course, considerable money, but the degree of enjoyment derived from plants and flowers is fortunately not always proportionate to the amount of money spent for them. We know many a modest flower-garden tended by loving hands, after a hard day's work, or at odd moments snatched from household duties, which gives more genuine pleasure and real enjoyment to its possessor than all the hot-houses, graperies and velvety lawns, cared for by paid labor, can offer to the millionaire.

Gardening Operations should be commenced now, by making careful plans of whatever is contemplated, by procuring the necessary seeds and implements, and by thoroughly informing oneself as far as possible about the requirements of the plants to be grown.

Soil for Flower Beds.—A light, friable loam, containing a moderate amount of vegetable matter and sufficient sand to render it porous is best adapted for most flowering plants; but as it rarely happens that the amateur gardener has much choice of soil, he must make the best of given circumstances. Fortunately, most plants accommodate themselves to various and sometimes most dissimilar conditions.

COLUMBINES.

With the introduction of the newer Western species of *Aquilegia*, which is the botanical name of the genus, these beautiful perennial plants have received renewed attention. All the species found in cultivation are worthy a place in the herbaceous border. In addition to these, hybridizers have created so many hybrids and crosses as to almost obliterate some specific distinctions.

The various shades of violet, red, and yellow are the predominant colors of their flowers, and a white Columbine of good shape and size has long been sought for. Such an one has recently been discovered in the Rocky Mountains, and is now brought to notice under the name *Aquilegia cærulea Jamesii*. The flowers are pure white, very large and of remarkably graceful habit.

It is easily grown from seed, and if sown early in pots in the house or in a hot-bed, flowering plants may be obtained the first year. Sown in spring in the open ground it will bloom the following season. If the plants come up too thick, they have, of course, to be thinned out, and the young plants may be transplanted. A moderately rich, rather dry soil suits them best. They are perfectly hardy, yet they are materially benefited by a light covering of leaves during winter.

AQUILEGIA CŒRULEA JAMESII.

DICENTRA SPECTABILIS.

The Dicentra, or, as it is more popularly known, the Bleeding Heart, from a rather fanciful resemblance of the flower to a heart, though just where the drop of blood is supposed to be I have never been able to determine, is a very handsome and showy plant. I do not know that florists will justify me in calling it a tuberous rooted plant; perhaps it is not, strictly speaking, but it has very thick, succulent roots, which resemble tubers quite as much, if not more than they do ordinary roots.

In a soil made deep and rich, this plant grows from two and a half to three feet high. The stalks, which are many, are of a naturally curving habit; and as they branch freely and are thrown out from the crown in all directions, a good specimen forms a rounded mass of foliage, covering a space of four or five feet across. The foliage is much finer than that of most garden plants, and would make this plant well worth growing if it had no blossoms. Its flowers, which are a bright rose color and white, are borne in racemes. Each raceme usually contains from twenty to forty flowers. The flowers hang gracefully along the stem, and seem to be dancing in the air with every movement of the plant, for the stem connecting each flower with the stalk is so slender that at a little distance you do not see it. It blooms very profusely in May and June, and occasionally thereafter, but its later crops are never so profuse as that of the months named. It is a very easy plant to manage. Every spring, before it starts into growth, give it a dressing of well-rotted manure.

On account of its ease of management, and the certainty with which it can be forced successfully, it is a favorite with florists for winter flowers, and any one having a large clump should take up some roots and pot them for use in the sitting-room. Take them up in October, and allow the pot you put them in to remain outdoors until about the time you want to start them into growth. Or, instead of leaving them out of doors, remove them to the cellar after potting them, and leave them there until the last of December. Then bring to the light; water sparingly at first. As growth advances, give water more freely. After the shoots are a foot high, give a weekly watering with liquid manure or some good fertilizer. After blooming, return the plants to the cellar, and leave them there until spring, when they can be planted out in the border.

E. E. REXFORD.

ROSES IN THE GARDEN.

Cannon Hole, in his charming book about Roses, writes: "He who would have beautiful Roses in his garden, must have beautiful Roses in his heart. He must love them well and always." This, said the late Mr. H. B. Ellwanger, is the sum and substance of what constitutes our success in Rose culture; without this true love, failure, partial or complete, must surely attend our efforts. Because we are imbued with a love for the Rose, it does not of necessity follow that we can grow Roses well—experience teaches otherwise; the novice must be prepared to expect some disasters arising from the mistakes which he will certainly make.

FLOWERS AT FUNERALS.

Flowers, like tears, are made to serve the expression of our greatest joys as well as our deepest sorrows. The use of flowers at funerals is certainly a beautiful custom; but when we read of three huge wagon-loads of floral work being carried in the funeral procession of an illustrious French statesman, one may well be in doubt which of the two was intended to be the most prominent feature,—the funeral or the flower-show; and the most ardent lover of flowers would rather trust the green grass and wild Daisies to bedeck his grave than that his funeral should be made the occasion of a pageant flower-show.

DIANTHUS.

In the Dianthus family we have no showier members than those which hail from China and Japan. They are truly gorgeous in color, and these colors are combined in such a variety of ways that the result is very pleasing to any one who is fond of brilliant effects. These Pinks bloom very profusely, and are particularly useful for cutting, combining well with most other garden flowers, though really more satisfactory, I think, when used by themselves.

It is a fact that we do not often see spoken of that most flowers appear to better advantage in vases or bouquets when kept by themselves. It is true that there are some kinds which combine well with others, but not many. Use a dozen different kinds of flowers in the same vase, and the effect is never as fine as if but one kind were used. If you have never noticed this, try it, and I am confident that you will not use more than two or three kinds at the most in the same vase.

These Pinks can be brought into bloom quite early by starting the seeds in the house if you have not a hot-bed convenient. Keep the plants strong and healthy until it is safe to put them in open ground, by giving them all the sunshine you can, plenty of fresh air on pleasant days, and only enough water to keep the earth they are growing in moist. When they begin to grow in the garden, pinch out the top, to induce branching.

Most of them will come double, but the single ones are well worth growing, on account of their fine colors and brilliant markings. Many of them will have fringed petals, and be quite as double and large, if not as fragrant, as the *Carnation*, which is an aristocratic relative. These Pinks will continue in bloom all through the season and should be in every garden.

D. ANTHUS.

GROUP OF DIANTHUS.

HALF-HARDY AND TENDER ANNUALS.

Under this term are understood all those annual flowering plants which, although they bloom freely in the open ground, require artificial heat to assist germination and promote their early growth. Among this class are found some of the most beautiful and most interesting treasures of the garden; and as they flower generally after the flowering season of most hardy annuals is past, they become indispensable wherever a continuous bloom is desired.

The ordinary hot-bed of stable manure offers the simplest means of obtaining a gentle bottom heat sufficient for most seeds, though when other more perfect resources are available, they will of course be employed. In many cases the seeds are sown on the layer of soil which covers the hot-bed, but the most usual and by far the best plan is to sow them in pots or seed-pans,—the latter being preferable, as they are more shallow than pots, and afford a larger surface in proportion to their breadth. If these cannot be procured, shallow boxes will answer. The pots should be quite dry and clean when used, and to insure thorough drainage, which, essential for all plants, is doubly so for seedlings, must be filled at least one-third their depth with broken crocks or lumps of charcoal, the largest fragments being placed at the bottom and the smallest at the top. A uniform compost of light sandy loam, enriched by a considerable mixture of fine leaf mold, or very old hot-bed manure, kept till it can easily be rubbed to powder, may be used.

Fill the pots lightly with soil to the brim, when the pot should be gently struck to settle the mass about half an inch from the brim. If it should settle below that point, a little more may be added. When a sufficient number of pots are filled, the surface of each should be gently leveled by pressure with a circular piece of wood having a clean, smooth surface, which, from rendering the smaller seeds more evident to the eye, will facilitate their equal distribution. The seeds should be uniformly and thinly scattered over the flattened surface, and be then covered by a slight layer of pulverized soil, which for most seeds need not be thicker than a twenty-five cent piece, after which the surface may again be slightly pressed, then gently watered with a very fine rose watering-pot, and it is ready to be placed in a frame.

In the case of very small seeds, the covering of the soil should be very thin, barely covering the seeds, and as seeds so minute are liable to be carried down into the soil, unless very carefully watered, it is even advisable to moisten the flattened surface of soil in the pot *before* sowing the seeds, instead of afterward. Place the pots containing the seeds on the hot-bed, or in the greenhouse near the glass. Keep them shaded, which will prevent absorption by the rays of the sun, and the consequent necessity of frequent watering, which cakes the soil, and does much mischief to seeds of slow growth. Flat seeds are best put in edgeways, being sometimes liable to rot when sown flat. As the seedlings of the slender-growing kinds appear above ground, care must be taken that they are not washed down and lost when water is applied.

Toward the middle or end of May, many of the seedlings will be ready for transferring to the borders or beds they are intended to decorate; but previous to this exposure, it will be necessary to prepare them for the removal by admitting air to the frame, both day and night; or, what is better, by placing them in a separate frame, in which they may be gradually hardened off — at first by keeping the lights down during the day only in favorable weather for five or six days, after that at night also, proceeding carefully while the nights are cold. Many of the half-hardy and tender annuals will succeed well if planted in the open ground the last of May, and treated the same way as hardy annuals.

FLOS.

The Window Garden
AND GREENHOUSE.

THE ZANZIBAR BALSAM.

Impatiens Sultani.

The most attractive novelty introduced for many years is this new perennial plant, which, although belonging to the Balsam genus, is very different from the common Lady's-slipper, resembling in its general habit more the Touch-me-not Balsam. The plant is of compact growth, and, under favorable conditions, astonishingly vigorous.

The flowers are about an inch in diameter, of rich carmine-magenta color, and produced in so great a profusion as to nearly cover the entire plant. A more easily grown and free-flowering plant can hardly be imagined. It may be readily propagated by cuttings or from seed.

Any ordinary good potting soil suits the plant; but, when growing vigorously, some liquid manure should be applied occasionally. When grown as a house plant, it requires a treatment similar to Coleus. For outdoor culture, a partly shaded location and a deep, rich, rather moist soil will be most favorable.

IMPATIENS SULTANI.

INEXPENSIVE WINTER ROSES.

In April of 1882 I received some three dozen Tea and Bourbon Roses, all fine plants. A cold frame was improvised for their shelter during the early spring months, and in September a 7x18 lean-to greenhouse—half house and half cellar—was constructed south of the basement laundry. The laundry is connected by a door with the furnace-cellar of the house, and its ordinary winter temperature is 50° Fahr. The windows between the laundry and greenhouse were removed. The latter is, in fact, nothing more than a large sunken cold frame, getting its heat, when the sun does not shine, from the furnace-cellar through the open door and windows of the laundry. It is provided with thick shutters hinged at the bottom. Water was introduced by extending one of the laundry pipes. Two-thirds of the plants were put on benches; the rest in pots. Their summer treatment had been unskillful; and still most of them entered their winter quarters in a healthful and even vigorous condition.

We were never without Roses. The buds cut in November, the least productive month, numbered forty. In March, April, and May they were very abundant.

The expense was small. The heating cost nothing. It required but little care. The only irksome thing was opening and closing the shutters, and that was inconsiderable.

The insect enemies were easily controlled. Quassia and smoke were both tried, the latter proving the better. Mildew was more troublesome. The Safrano, in particular, suffered from it. The ordinary remedies sufficed, but caused more trouble in their application than when hot pipes were used.

The varieties which did best were *Monsieur Furtado, Safrano, Bon Silene;* next came *Isabella Sprunt, Madame Bravy, Marie Van Houtte,* and *Catherine Mermet.* Perhaps I should add *Souvenir d'un Ami.* The least prolific were *Bougeri, Gerard Desbois, Perle des Jardins,* and *Maréchal Niel.* The *Bourbons* blossomed moderately.

The connection with laundry and cellar is advantageous, not only because it prevents freezing at night, but also on account of moderating the temperature on sunny days. It is also self-regulating. The highest temperature is about 85°, the lowest 34°. The average day temperature is about 60°; at night it rarely sinks below 40°.

ANSON D. MORSE.

HEATING GREENHOUSES WITH OIL-STOVES.

The heating of small greenhouses remains still a most vexatious theme with the amateur horticulturist. The experience of a correspondent of the *Gardeners' Magazine* with oil-stoves leads him to offer the following advice:

Oil-stoves have undergone considerable improvement of late years, and those offered by the leading manufacturers are very efficient, and well suited for keeping the frost out of structures of small size. The houses for which the stoves are best suited are those not exceeding fifteen feet long and eight feet wide, as where larger, a hot-water apparatus will be much better. The employment of very large stoves with three or four burners is not desirable. The better course is to use stoves of medium size with two burners, and have two or three, according to the size of the house. For one of these dimensions three stoves should be obtained, and be used according to the severity of the weather. During light frosts one would suffice to keep the plants safe, and with from twelve to twenty degrees of frost, two stoves should be used, and a third be brought into requisition when the frost exceeds twenty degrees. It is impossible to regulate the heat of an oil-stove to any considerable extent, and when one powerful stove is employed, the heat will be too great at one time and insufficient at another. But by the arrangement suggested, there will be no great difficulty in regulating the heat according to the weather outside.

Complaints are sometimes made of the stoves giving off an objectionable smell; but when I have used them I have not had any cause to be otherwise than well satisfied upon that point. I could, on entering the house, at once tell whence the heat was derived, but the atmosphere was by no means unpleasant. Much, of course, depends upon the way in which the stoves are managed,—the essential points being to use good oil, to keep the reservoirs well filled, and to trim with as much care as a table lamp.

PRESERVING CUT FLOWERS.

"What shall I do to keep my flowers fresh as long as possible?" asked a lady to whom the compliments of the season had just been tendered in the shape of a beautiful basket of flowers.

The worst place they can possibly be in to keep fresh, we replied, is just where they are, in the dry atmosphere of an air-heated parlor, close by the register. As they have, of course, to remain in this room, where they may be seen to good advantage, place them as close to a window and as far from the register as possible, but by no means open the lower sash so as to allow a current of air to pass over them; wind or strong draft will destroy them as effectually as heat. Keep them sprinkled—bedewed, rather—with cool, but not icy water. An "atomizer" is an excellent apparatus for this purpose. During night put them in a cool place, but not where it freezes, and cover them with a dish-pan or any vessel large enough not to touch them; an empty box answers the purpose very well, or a basket overhung with wet towels. The object is to keep the atmosphere that surrounds them in the most favorable condition possible to prevent evaporation without inducing decay.

For vases and jardinières in which flowers are arranged, clear water is as good as anything. This should be renewed every day, and the flower stems cut off a little with a sharp knife, not broken off or cut with scissors, for these crush the fine tubes of the stems, and thereby prevent their power of absorption. Wilted flowers become quickly revived by putting them a few minutes in water as hot as the hand will bear.

THE SUNSET ROSE.

None of the many beautiful Roses exhibited at the last meeting of the New-York Horticultural Society attracted so much marked attention as the new Tea Rose, "Sunset." The bunches of its brilliant flowers were indeed a sight worth beholding.

The "Sunset" Rose is a sport of the well-known *Perle des Jardins*. That is, a shoot of one of these plants produced flowers which, instead of the typical canary-yellow, were of a rich tawny shade of saffron and orange, similar to the color of the Saffrano. Only a single cutting was secured; but in this, as well as in all its offsprings, the peculiar color of the flowers became perpetuated.

The flowers are, like those of its parent, very large, full, well formed, and borne on stiff stems. The mature foliage is very dark and glaucous, while the young leaves are of a remarkable and beautiful deep crimson tint; the leaflets are five to seven in number, and deeply serrated.

For winter forcing, the success and value of this new Rose seems to be already fully assured; and there can be little doubt that for summer blooming and outdoor culture it will prove not less valuable.

THE SUNSET ROSE.

PERSIAN CYCLAMENS.

Persian Cyclamens are beautiful little plants and exceedingly profuse bloomers between January and March. A very large type of them is called *Giganteum*, and of the normal and Giganteum forms there are several named varieties of good merit. After growing a few of each I have concluded that, from a packet of mixed seed of some first-class strain, I can get as bright blossoms, as many of them, and often of as good form and substance, as I can from seeds of some of the named sorts. *Giganteum rubrum* has had the largest flowers, and *Giganteum brilliant* the deepest and brightest colored ones, with me. There are many hardy Cyclamens; but, except in cold frames, they have not proved very satisfactory in this country, and, even at their best, they are not so attractive as the Persian Cyclamens.

I sow my Cyclamens in a pot or pan of light soil as soon as I can get the seeds, say in February or March, and soon after they germinate prick them off into small pots, then pot them singly into 2¼-inch pots and afterward into 3-inch ones. I endeavor to keep these young plants growing all summer, and in fall several of them may need to be repotted into 4-inch pots. In winter keep them near the glass; faintly shaded from strong sunshine and moderately moist, most of them will blossom. After they have done blooming, say in April, I give them rather less water than before, but do not dry them off thoroughly, and in May, plant them out in an open frame; any piece of garden ground would do as well. I take no further heed of them during the summer months, except keep away weeds.

About the end of July or in August, they will begin to grow; then I lift and pot them, using well-drained pots and rich earth, and place them close together in a cold frame. For some time I water sparingly; but as they advance in growth, more copiously. They are taken indoors before there is danger from frost. These should blossom full in January, February, and March.

By raising a few seedlings every year (and every seed should come up without any trouble) you can always have a young, vigorous set of plants. I do not care about keeping Cyclamens over three years old. In potting Cyclamens I like to have the corm rest upon the top of the soil, or, at most, be buried but to half its depth. But when I plant them out in the frames, I place the "roots" about an inch or half an inch beneath the surface. Some growers prefer growing their Cyclamens altogether in pots.

The autumn blooming species should be potted in August. *C. Europæum*, which is the best of this class, has very variable foliage, and produces red, rose, or pure white, deliciously fragrant flowers in August.

WM. FALCONER.

ACHIMENES.

For the decoration of the greenhouse and conservatory in summer there are but few plants, if any, more desirable and beautiful than the Achimenes and some allied genera of the family *Gesneraceæ*. Their flowers are of most delicate beauty, varying from pure white to rose, lilac, scarlet, and most brilliant crimson.

The little scaly bulbs or rhizomes should be set away as grown, and kept perfectly dormant in winter,—secure from extreme cold, the soil moistened sufficiently to keep the little roots from drying up and wasting their strength. Just here is the source of many disappointments when roots are brought up in the spring. They have remained in *dry, hard soil* so long that they have not sufficient vitality left to sprout, though seeming sound.

In February or March, they should be shaken out of the old soil and repotted in a light mixture of leaf-mold and sandy loam in well-drained pots, in groups or single specimens. Water moderately and keep in a warm, sunny situation until buds form, then move to a light but somewhat shady place. The blooms last longer and are prettier than when exposed to hot sunshine or winds. They bloom at the axils of the leaves, and will continue to grow and flower from early summer to late fall. When done flowering, withhold water gradually. They multiply rapidly and become great favorites wherever known.

AMATEUR.

ARRANGEMENT OF PLANTS.

In the arrangement of plants in the greenhouse, says Thomas Meehan, in the *Gardener's Monthly*, continual change is commendable. Every few weeks the plants may be reset, and the houses made to appear quite different. In the end, where the lowest plants once were set, now the taller ones may be placed; here a convex group, and there presenting a concave appearance. Drooping plants on elevated shelves, and hanging baskets from the roof, make little paradises of variety in what were once unbearable monotony.

Gardeners often wish to know the secret of maintaining a combined interest, on the part of their employers, in their handiwork, and this is one of the most potent: continued change and variety in the appearance of everything.

Beautiful flowers, graceful forms, elegant combinations, all develop themselves with a healthy luxuriousness, and ever changing endlessness will wake up an interest in the most indifferent breast.

Lawn and Landscape.

NEW CONIFEROUS TREES.

SPRUCES.

First upon the list, and perhaps one of the most important gains of many years, is the Rocky Mountain Blue Spruce, *Abies pungens*. Its chief merits are great hardiness and beauty. So much disappointment has resulted from planting tender evergreens that planters generally are commencing to lay great stress upon hardiness, and it is right that they should do so. What advantage is there in growing fine specimens of rare species only to lose them as they reach perfection? Two years ago, when in Paris, I saw in every section of that grand city ruined specimens of noble and rare evergreens, which had taken years of patient attention and care to develop. To be sure, those extremes do not come every year, but we cannot place too much importance upon the qualification of hardiness. The Blue Spruce is the bluest of evergreens, and a well-developed specimen is a sight that will charm every lover of beautiful trees.

[Our illustration on the front page of this number, for which we are indebted to the *Gardener's Chronicle*, represents one of the largest and most beautiful specimens under cultivation. It is seventeen feet high, and stands in Professor Sargent's grounds at Brookline, near Boston. This magnificent tree, standing perfectly isolated on the velvety lawn, boldly contrasting against the bright green of the group of deciduous trees which form its background, produces one of the grandest arboricultural effects it ever was our fortune to behold, and to which neither words nor illustration can do full justice.—ED.]

Abies parviformis is a dwarf Spruce of slow growth and small foliage. It is an excellent small evergreen, very hardy, and will be useful for small grounds.

Abies nigra Doumetti is a handsome form of the Black Spruce, of dwarf habit and compact growth.

PINES.

Pinus ponderosa, the heavy wooded Pine of California, has proved to be a valuable accession. It is perfectly hardy, of fine form, has long, distinct foliage, and is a vigorous grower.

Pinus Pallasiana has bluish foliage, and is hardy and beautiful.

Pinus Jeffreyi, from California, has also succeeded admirably, being hardy and very ornamental.

RETINOSPORAS.

The beautiful *Retinispora plumosa aurea* and *argentea* and *filicoides* are charming evergreens of moderate growth and medium size, and well adapted to plant in small places; but they are tender with us, and must be protected with a few branches of evergreens, or they will suffer in winter. Those who are willing to devote extra care and attention to them should introduce them to their garden by all means. But for the general planter in cold regions, we cannot yet recommend them.

JUNIPERS.

The Silver Variegated Japan Juniper, with foliage of a glaucous green color, and the Golden Japan Juniper, which has golden yellow foliage all the year, are two varieties to be commended.

YEWS.

The Golden Yew, *Taxus elegantissima*, should not be overlooked, nor should we forget the Pyramidal Arbor Vitæ, or Geo. Peabody, with its golden foliage. The Golden Yew and Geo. Peabody are undoubtedly the two best golden evergreens, and among the Arbor Vitæs there is nothing hardier or more handsome than the Pyramidal. The new varieties of Arbor Vitæ introduced by Mr. Robert Douglas are very promising.

It is a great satisfaction to those engaged in horticultural pursuits to know that there are always new pleasures to look forward to. With each year comes some new tree or plant to engage our attention and demand our care, and our interest is never permitted to flag, even for a moment. What a gratification it is to aid in the dissemination of a really valuable article! Joy enters the home when the new plant arrives; the new-comer is welcomed, receives the best of care from loving hands, and if it proves worthy, affords genuine happiness to the household. But if perchance the great expectations should not be realized, and the high-priced novelty should prove worthless, what sorrow and disappointment follow! Let us therefore exercise a care that we distribute only good things, and thus contribute to the welfare and happiness of our fellow-beings.—*W. C. Barry, before the American Nurserymen's Association.*

FORMING LAWNS.

In making new lawns there are a few simple rules to be observed, without compliance with which success cannot be relied upon. These are summed up in the *Country Gentleman* in the following concise manner:

1. Take plenty of time in preparing for them.
2. Grade moderately, rounding off sharp points or declivities.
3. Underdrain.
4. Plow and subsoil, if admissible.
5. Make the soil uniformly rich, deep, and even.
6. Harrow well and repeatedly.
7. Make several inches at the surface fine, rich, and mellow.
8. Sow the seed early in spring, at the rate of two bushels of clean seed per acre, raking, rolling, or brushing it in; or sow chaffy seeds, five or six bushels per acre.

Early in summer the surface of the ground will be a uniform green, soon after which begin to mow it, cutting high at first, and once in two weeks, and as the growth increases and strengthens, cut once a week. It is hardly necessary to add that the ground should be got ready in the autumn before sowing, so that the seed may be put in the first thing in spring.

Established lawns should be mowed as often as once every four or five days during the rapid-growing season, and less frequently later. If cut often enough, the grass need not be raked off, but left as a mulch. It is only when a taller growth is cut that raking is needed to prevent the dead grass from choking the lawn-mower at the next cutting. Late in the season set the mower to cut high, so as not to expose the roots. A well-made lawn will never need watering, as richness and depth of soil will obviate it.

Foreign Gardening.

GLIMPSES OF SOUTH AUSTRALIA.

The extremes of the climate and seasons of Australia offer to the horticulturist many difficulties in the cultivation of introduced plants not experienced elsewhere. The Report on the Progress and Condition of the Botanic Garden and Government Plantations at Adelaide, by director Dr. R. Schomburgk, from which we condense the following, furnishes much interesting information in this regard.

The summer season includes the months of December, January, and February, when the temperature on the plains frequently exceeds 100° in the shade, and reaches from 140° to 150° in the sun. The highest degree of heat in the shade ever experienced was 116°3′. On the 18th of January, 1882, the temperature registered 180° in the sun, and 112° in the shade. As the boiling point is 212° it will be seen that the heat in the sun on that day was within 32° of that temperature.

The Australian summer months are characterized by great heat, hot winds and dryness. Not a drop of rain falls often for six or eight weeks, and it is during this time that not only the acclimatized but the indigenous vegetation suffers materially. The ground becomes so hot and cracked that even the occurrence of a fall of rain serves only to clear the leaves from dust, as it evaporates in a very short time. During this period the country wears a desolate, sunburnt appearance, and is destitute of all green herbage; but after the setting in of the rains there is a magic appearance of grasses and herbage.

The autumn season includes in Australia the months of March, April, and May, and is one of the genial and beautiful parts of the year. The temperature falls rapidly, only reaching 70° to 80° in the shade, the mean being 64°6′, and in the month of May it is only 58°2′. The northern winds become cooler, the solar radiation is considerably reduced, and heavy dews begin to fall at night. The indigenous vegetation which has suffered through the summer awakes to new life; and trees, shrubs, and herbage put forth fresh growth, while the leaves of the European deciduous trees get the autumnal tints, and drop.

June, July, and August constitute winter, —the rainy season,—which is usually marked by frequent rains and strong winds; but it also often happens that remarkably dry winters have to be contended with. The mean temperature during the three months is 54° to 55°7′. Hoary frosts and heavy frosts often appear during the night, which have since the last four years increased in severity, and the lowest temperature experienced was 28°.

The spring season—the most genial and most beautiful in South Australia, and probably not surpassed in any other part of the world—includes the months of September, October, and November, the mean temperature during the first two months being 60° to 70°. At this time of the year the gardens are in their best floral beauty—trees, shrubs, perennials, annuals, emulate each other in regard to their flowers, which are of such a size, richness of color and perfection, as a

northern gardener can scarcely imagine. But early-appearing hot winds in November destroy their floral beauties in the course of a few hours.

The average fall of rain during the year in the plains of Adelaide is twenty-one inches; but the distribution is unequal, even in places not far apart, each often showing a great difference in the rainfall.

From the foregoing it can be imagined that not all plants from other countries will grow here. The tropical and alpine ones suffer not only from the dry atmosphere, but the former also from the cold during the winter months.

Most fruits from other parts of the globe thrive luxuriantly in South Australia, and come to such perfection in size, and frequently in flavor, as is hardly known in other countries, and many fruits are found to improve materially by the change, the climatic conditions being manifestly favorable to them. Apples grow to great size, but do not always possess fine flavor, and contain more acidity. Pears, Peaches, Apricots, and Plums reach to large size and contain a good flavor. On the slopes of the Mount Lofty range facing the plains, fine Grapes of great size are grown, and the summer months ripen them to the greatest perfection. The wine produced often contains 25 to 30 per cent. alcohol.

All vegetables can be grown during winter and autumn on the plains, but in no comparison so successfully as in the gullies of the hills, where the finest vegetables and culinary herbs are raised throughout the year in great abundance. Cauliflowers about two feet in diameter are often seen in the market. Cucumbers, Water and Muskmelons grow to an extraordinary size and of good flavor. The South Australian cereals, especially Wheat, are considered the finest grown in the world.

When a new-comer visits for the first time the agricultural and horticultural shows, and observes the fine display of flowers, fruits, vegetables, and cereals in their utmost perfection, he must consider South Australia a favorable land; and it is indeed surprising that this fickle climate, with its extremes, drought, and hot winds, can produce such developed specimens of Nature's gifts.

ROTHSCHILD'S WONDERFUL ORCHID.

French horticulturists, says the *Pall Mall Gazette*, are at present greatly interested in a plant at one of M. de Rothschild's celebrated hot-houses at Ferrières, near Paris. Perhaps the strangest of the strange family of Orchids, *Vanda Lowi*, was discovered by H. Low, in 1847, in the hot, damp forests of Bornee, where it climbed to the top of the highest trees. Its long leaves, which not rarely measure a yard or more in length, appear small if compared with the length of the clusters of buds, which reach a length of three yards. Each cluster — of which there are at present eleven in full flower at Ferrières — numbers two hundred and eighty buds, all flowering at the same time, which are so different in appearance that side by side they may easily be taken for distinct species. The plant was bought in 1876 for a large sum of money, but at present it is considered worth $25,000.

Horticultural Societies.

NEW-YORK HORTICULTURAL SOCIETY.

Notwithstanding the extreme cold and stormy weather, which made it almost impossible to transport tender plants and flowers any considerable distance without their becoming injured, there was a fair exhibition at the January meeting. Among the most meritorious exhibits were a magnificent collection of some twenty-five Orchids from George Such. A *Dendrobium Wardianum* had eight full flower spikes, most of them over a foot in length. Mrs. W. J. Morgan's collection of Orchids contained, among other superb specimens, an *Angræcum sesquipedale* and *Lælia autumnalis*. Samuel Henshaw showed as large and brilliant *Amaryllis Aulica* as we have ever seen. Hallock and Thorpe's collections of Geraniums, Carnations, and especially the new *Impatiens Sultani*, attracted deserved attention.

The excellence of the Roses seems to increase with every subsequent exhibition. The new "Sunset" Rose formed a prominent feature.

Charles E. Parnell exhibited a very large and meritorious collection of cut flowers. Several choice specimens of Cinerarias were exhibited by E. W. Parsons & Co.

The most tempting exhibit was two monstrous bunches of Barbarossa Grapes, weighing eight pounds together, and several choice bunches of Black Hamburgs from Louis Compondu, gardener to Mr. Charles Butler, of Fox Meadow gardens. The vegetable department contained exceedingly well-grown Mushrooms, some of them seven inches in diameter, forced Tomatoes, Beans, Cucumbers, Asparagus, Radishes, etc., etc.

AN INTERNATIONAL EXHIBITION OF FRUITS.

The World's Industrial Exposition will open in New Orleans on the first Monday in December, 1884, and continue for six months. This will be in the largest sense a World's Exposition of Industry, and will in many essential features surpass any exposition heretofore held in this or any other country. The provisions being made for this great fair are of the most generous character. The Main Building, now in course of erection, will cover thirty-two acres of ground, and will give far more exhibition space than any structure heretofore erected in this country. An Art Building, an Agricultural Building, and a Horticultural Building, and other structures for special purposes, will all give most liberal accommodations to these several interests.

It has been decided by the Board of Managers to give the interests of Horticulture, especially those of Pomology, a larger place than they have held in any other fair in the world. In addition to the completest possible display of trees, plants, and flowers, there will be held an International Show of Fruits, organized and managed by the Mississippi Valley Horticultural Society.

From all indications, this will be the most extensive exhibition of its kind ever held on this continent; and the fact that it is under the immediate superintendence of the capable and indefatigable president of the Mississippi Valley Horticultural Society, is in itself sufficient guarantee that it will be a grand success. It is to be hoped that every State and Territory will be represented by delegates, as well as by creditable exhibits.

Premium lists will be issued at an early day for distribution to all interested. All inquiries and applications for space should be addressed to Parker Earle, Cobden, Ill.

MASSACHUSETTS HORTICULTURAL SOCIETY.

Amid the difficulties which beset many of the Horticultural Societies of our large cities, it is encouraging to note the increasing prosperity of this stanch old organization, as indicated by the liberal amount of premiums offered for the present year.

At the meeting held January 5th, the appropriations recommended by the executive committee were unanimously voted, viz.: for premiums for plants and flowers, $1750; fruits, $1000; vegetables, $550; gardens, $150; library committee, $400; committee on publication and discussion, $150; committee of arrangements, $300.

NEW JERSEY HORTICULTURAL SOCIETY.

The Ninth Annual Meeting of this organization, held January 22d and 23d at Camden, N. J., was one of the largest and most interesting in the annals of the society. Many of the papers read, and the discussion thereon, were of great practical value. All these will be published in the forthcoming *Transactions*, which to any fruit-grower and market-gardener residing in the State are quite indispensable. These, as well as the reports of the State Experiment Station, are furnished free to all members of the society, by addressing the secretary, E. Williams, Montclair, N. J.

NEW JERSEY STATE BOARD OF AGRICULTURE.

On February 5th and 6th, the annual meeting of the Board will be held at the State-House in Trenton. Arrangements have been made with the railroads to issue excursion tickets at reduced rates, and orders for such may be had by addressing the secretary, P. T. Quinn, Newark, N. J.

THE "CHRISTIAN INTELLIGENCER'S" OPINION.

THE AMERICAN GARDEN was an elegant magazine last year, very tastefully printed and illustrated, and is still more attractive in appearance this year with its new cover. We take pleasure in acknowledging our indebtedness to it for many useful hints and much important instruction. We await its appearance every month with eagerness, always expecting to find something we wish to know, and invariably finding it. As its name indicates, it deals especially with the fruit and flower and vegetable garden, and in that sphere has no superior in this country; but often treats intelligently, and with discrimination, of matters pertaining to the work and interests of the farmer.

During the past year we have cut from this journal ten times as much as the space at our command has allowed us to print, and we always see those extracts come back from the type-setters with regret.

NOTICES OF THE PRESS.

THE AMERICAN GARDEN is one of our most valuable and able exchanges.—*National Baptist.*

THE AMERICAN GARDEN is a handsome magazine, devoted to the cultivation of flowers, fruits, and vegetables. It is full of interesting suggestions regarding the best methods of cultivating plants of every kind, and cannot fail to prove a valuable acquisition and companion to every amateur horticulturist.—*Farago Republican, North Dakota.*

Every one of our readers can find a reliable adviser in THE AMERICAN GARDEN, a beautifully illustrated monthly journal, devoted entirely to horticulture, and designed to fill this want. In its columns of "Seasonable Hints" it tells just what to do each month in every department, and offers in its "Answers to Inquiries" columns to solve all the difficulties that so frequently beset and dishearten the horticulturist. You cannot invest $1 better than to subscribe for this journal. Its publishers are well known as a reliable, enterprising concern, and we can assure our readers full value received in THE AMERICAN GARDEN.—*Laurel Enterprise.*

WHAT OUR SUBSCRIBERS SAY.

I take more interest in THE AMERICAN GARDEN than in any publication I have ever seen. It is *the* horticultural monthly of America.—*H. G., Highland Park, Ill.*

I think THE AMERICAN GARDEN is the best horticultural paper published. I can hardly wait for the next number to come.—*W. F. S. L., Huron, N. Y.*

The last number of THE AMERICAN GARDEN is the best yet published. You will have to make it a weekly within two years.—*Wm. Clapp (Editor Boston Journal).*

THE AMERICAN GARDEN is the best paper of the kind I have ever seen, and I like it so well I will not allow any number to be destroyed, but carefully preserve the file.—*S. M. S., Treasury Department, Washington, D. C.*

In renewing my subscription to THE AMERICAN GARDEN, I take the opportunity of expressing my high appreciation of its value. Any one who has had it for twelve months would, I am sure, miss it very much, if it were stopped from any cause.—*R. H., Montreal, Canada.*

I am very much pleased with THE AMERICAN GARDEN; it is the very thing every one that has a garden wants. Its colored plates are truthful and the most beautiful of the kind I have ever seen; and having been raised in one of the largest Rose nurseries of England, my experience in this direction is considerable.—*Ch. W. B., Pine Valley Mill, Utah.*

OUR BOOK TABLE.

Michigan State Horticultural Society. Report of the Fair of 1883. Chas. W. Garfield, Secretary, Grand Rapids, Mich.

Kansas State Board of Agriculture. Quarterly Report, containing acres, products, and value of field crops for the year 1883, and many other statistics.

Worcester County, Mass., Horticultural Society. Transactions for 1883; and Premium Schedule for 1884. E. W. Lincoln, Secretary, Worcester, Mass.

Injurious Garden Insects, by *Dr. Byron D. Halsted.* Number eighty-eight of the "Home College Series." An excellent condensed treatise on the subject. Published by *Phillips & Hunt,* New-York.

Agricultural Review and Industrial Monthly.—*New-York.*—The first number of the new series shows great improvement over the former magazine. It contains many excellent articles, and among its contributors are some of the best writers in the country.

Garden and Farm Topics, by *Peter Henderson, New-York.*—This neat volume of 250 pages contains a vast amount of practical information of interest and value to gardeners and farmers. Like all the author's works, it does not deal in speculative theories, but gives in plain, concise language, instructions and directions which may be relied upon and followed implicitly. Among the leading chapters of the work are: Popular Bulbs and their Culture, Window Gardening, Propagation of Plants, Rose Growing, Greenhouse Structures, Formation of Lawns, Culture of Onions, Cabbage, Cauliflower, Celery, Strawberries, and other farm and garden crops.

Outing and the Wheelman, *Boston.*—During its two years of existence, *Outing* had become so endeared to us that we felt unfeigned regret when we read the notice of its combination with the *Wheelman,* as it seemed hardly possible that improvement could result from combining with any magazine. When the January number appeared, with *Outing* all on wheels, we perceived that our apprehensions had become verified. But, lo and behold, there comes the February number, not only full of the familiar ring of unlimited, universal outing, but refreshed, invigorated, rejuvenated; outing on the St. Johns in Florida, outing over the Alps, outing under the Southern Cross, outing by the side of the Summer Sweetheart, outing at home, outing everywhere. Mr. Editor, we tender you our apology for doubting your ability to improve *Outing;* you have done it! Success to *Outing and the Wheelman!*

CATALOGUES RECEIVED.

Ellwanger & Barry, *Mount Hope Nurseries, Rochester, N. Y.* Descriptive and Illustrated Catalogue of Ornamental Trees, Shrubs, Hardy Perennial Plants, etc. This is the most complete and accurate catalogue of its kind that comes to our table.

J. T. Lovett, *Monmouth Nurseries, Little Silver, N. J.* Illustrated Catalogue of Small Fruit Plants, Trees and Plants; with colored plates of the Hansell Raspberry and the Jessica Grape. This is a handsome and carefully gotten-up catalogue, containing all the best in its line.

ANSWERS TO CORRESPONDENTS.

Celery Going to Seed.—*B. B. C., Fairville, N. B.*—Early sown Celery, especially when the plants receive poor treatment, and in very dry seasons, are apt to obey the natural laws and produce seed. The best preventive against seeding in Celery is plenty of manure and plenty of water. *Hollow Celery* is simply a reversion to the natural form. It is more common in tall kinds than in dwarfs.

Best Quinces.—*E. P., Bucyrus, O.*—Quinces vary considerably in their adaptability for certain localities. The *Apple* or *Orange* is the best in texture and quality; the *Pear* is a healthier grower, more productive, and ripens later. The *Champion* is very vigorous and productive, and an excellent keeper. In planting a Quince orchard we should advise to plant some of each variety.

Plant for Name.—*Mrs. C. H., Lititz, Pa.*—It is not generally an easy matter to determine a plant from a single flower only; yet, in this case, we do not hesitate to name the plant *Campanula pyramidalis,* the pyramidal Bell Flower, a native of Carniola, and nearly allied to our common Harebell. It is one of the most beautiful and hardy biennial plants, and is also admirably adapted for pot culture. It is easily raised from seed. If well managed, the flower stems will grow to a height of six to eight feet.

About Tuberoses.—*Mrs. T. H. B., Somerset Co., Md.*—Tuberoses should never be planted before the ground is perfectly warm. Plant four to six inches deep. During winter they have to be kept in a warm, dry place. The offsets, or small bulbs at the base, are best left on during winter, removing them before planting. These may be set out separately, and most of them will produce flowering bulbs for the following year. Bulbs that have flowered already will sometimes bloom again; but if one wants to be sure of having flowers, it is not safe to run the risk.

Turning Plants in Windows.—*Mrs. N. D. F., South Haven, Mich.*—There is a popular prejudice against turning potted plants, and yet there is nothing more important to the formation of symmetrical, well-shaped plants than that all parts should be equally exposed to light and sun. This cannot be accomplished in a window unless the plants are turned about once a week. With old, one-sided, shrubby plants this is of little use; but if young, healthy specimens are turned regularly they will always present a shapely appearance.

Winter-blooming Amaryllis.—*J. L. O., Fallston, Md.*—The bulbs should be kept dry and dormant during the latter part of summer and early autumn. When they show signs of growth, or when wanted to bring them to flowering, they should be repotted in soil consisting of sandy loam and leaf-mold, in rather small pots, say from four to five inches. Place in a temperature of about fifty degrees, increasing the heat gradually to sixty or seventy degrees. Water moderately at first, and abundantly as their growth increases.

Ivory Soap.—Short articles have been going the rounds of the press commenting on the fact that the Ivory Soap people have the permission of Harper Brothers to use the back of their magazine for March, they paying fifteen hundred dollars for the privilege. Such advertising is sure to pay, for an article of merit, if properly presented, is certain to attract the attention of the intelligent and discriminating, to which class the readers of Harper's belong. It pays to advertise a good article in a good medium.

NOTICE TO ADVERTISERS.

The March issue of THE AMERICAN GARDEN will contain a superb Colored Plate of Pansies, and will be an unusually attractive number. It will have an extra large circulation, and offers superior advantages to advertisers who desire to bring their goods to the notice of the best class of buyers.

Advertisements, to insure space, should be received before the 20th of the preceding month. For advertising rates, see second page of cover.

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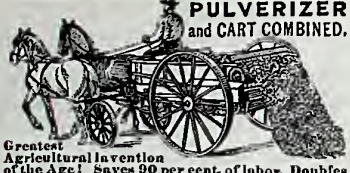

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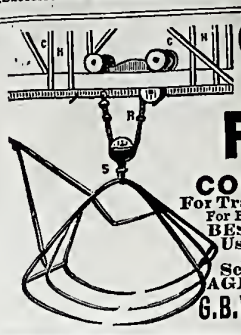

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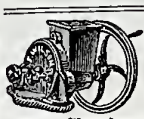

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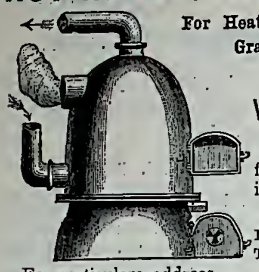

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VALUABLE TESTIMONIALS.

TRADE MARK.

DUNN & SCHURK Boarding and Sales Stables, 148 East 24th St.

NEW-YORK, Aug. 1st, 1883.

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Dear Sirs: We were having an occasion to put a valuable horse in condition for a race. In giving the horse his work he threw out a curb, in consequence of which I would have sold him, at that time, for three hundred dollars ($300), or less. Hearing of Ellis's Spavin Cure Liniment, I tried it with good results. In two weeks the curb was gone and the horse was going sound. I put him in condition again, and in two months we sold him for as many thousands as we valued him worth hundreds when he had the curb. The horse is at present boarding at our stable and being driven on the road every day. We can safely recommend your Spavin Cure Liniment for all bone diseases and callous lumps of any kind, if properly used.

Yours, with respect,
DUNN & SCHURK.

STARRIN PLACE STOCK FARM,
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Remedies received in good shape. Send me a glass sign by express, to Fonda, well packed, and I think it will come all right. Also send me some of those cards with a horse head and shoe on. *I have taken off several curbs, "one very bad"*; cured a case of *Sweeney* and *Navicular* disease with the *Spavin Cure*, and *restored several worn-out horses* with the *Powders*.

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This is a cross between the Excelsior and Waterloo Oats, combining in a remarkable degree the excellent qualities of both.

The average height, as the grain stands in the field, is six feet, yet the straw is so strong and firm that it holds up well, without lodging, the tall, luxuriant heads filled with plump, heavy grains. The quality and productiveness of the grain are unexcelled, yielding from 50 to 100 bushels per acre, according to the condition and state of fertility of the land.

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In this beardless variety we have one of the hardiest and most flinty varieties in cultivation, very productive, hardy, and vigorous. Straw yellowish-white, very stiff and erect, averaging 4 feet in height. For cultivation in North-west, Colorado, and the Pacific coast, where hard wheat is the favorite sort, we are confident that this will be particularly desirable.

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The above varieties were first offered by us last Spring, and were extensively grown throughout the country during the past season, and furnished ample proof of their excellence and superiority over the older varieties. To induce as extended a trial as possible, we offered liberal premiums to those who produced the largest quantity of grain from one ounce of either of these varieties. The result is marvelous and shows what can be accomplished by superior seed and good cultivation. The largest yields are as follows: The **Triumph Oats** produced 168 lbs., **Adamant Wheat** 108 lbs., and **Green Mountain Wheat** 71 lbs., each, from one ounce. The full report of the awards will appear in our Novelty Sheet, published in February, and will be found of interest, as some valuable information and suggestions about grain-growing are given. A copy will be mailed to all applicants.

NEW VARIETY SPRING WHEAT FOR 1884.

Pringle's **Invincible** is a beardless variety of remarkably robust and vigorous growth; the straw is strong, stiff, well glazed, healthy, and stands up well in all kinds of weather. The heads are four to five inches long, very compact, and uncommonly well filled; berry of light amber color, plump, hard, and very heavy. It is wonderfully prolific; a bushel will easily produce fifty to seventy bushels, if properly cultivated. To obtain such results, however, the seed must be sown thinly in drills, thirty to forty pounds of seed per acre being an ample quantity. The grain ripens quickly and remarkably evenly; care should therefore be taken not to let it get over-ripe before harvesting.

As the result of many extensive trials, during the past five years, in various sections of our country, under irrigation and without, we do not hesitate to recommend this new Wheat in highest terms to every wheat-grower in the world, fully convinced that it will everywhere give good satisfaction, yield profitable returns to the grower, and prove second to none for milling purposes. Price, $1.00 per lb.; 3 lbs., $2.50, by mail, post-paid. By express, at purchaser's expense, per peck, $4.00; bush., $12.00.

Every one can compete. No restrictions, except the seed must be bought of us this spring. Descriptive circulars, with full particulars, mailed free on application.

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SUMMER-FLOWERING BULBS.

Having secured a large stock of choice Summer-flowering bulbs, we are pleased to offer the following collections at a great reduction from regular prices.

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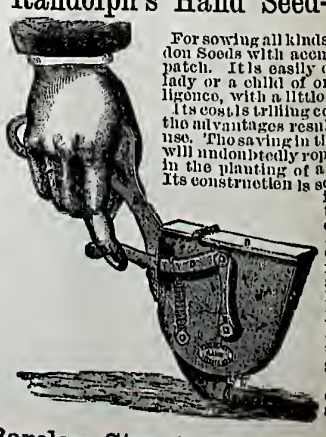
Randolph's Hand Seed-Sower.



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20 packets choice Flower Seeds *(our selection)*, including **WILD GARDEN SEEDS** (a mixture of 100 varieties of Flower Seeds), **for $1.00.**

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THE CARDINAL.

This new Tomato has been carefully cultivated and subjected to many tests during the past year or two, and has maintained a remarkable perfection in all that can be desired in a Tomato. It is of vigorous growth, yet comparatively compact in habit, and, weight of fruit considered, is the most productive variety known. The fruit is perfect in shape, being uniformly smooth and free from ridges, and is of a brilliant cardinal-red. Although fewness of seeds is a claim made for every new Tomato, it is a fact that by actual weight and measure tests THE CARDINAL has at least one-third less seed than the very best of the other varieties, and the thickness of pulp is most remarkable. It gives promise of being a good shipping sort, as ripe fruits picked in midsummer have kept in fine condition for ten days. The decided points of merit as described puts THE CARDINAL ahead of all other Tomatoes. Were it not so, there would be no need of adding another to the already large list of varieties.

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A European novelty, recommended on account of its earliness, handsome form, and delicious flavor. The raiser describes it as follows: "Of the size and shape of a large plum, scarlet, very smooth and glossy, contains but few seeds, and in flavor closely resembles that of an apple of fine quality. None of the Tomatoes known to me equal in productiveness this fine sort, which is also one of the earliest, and will probably be found well adapted for northerly districts."

Per packet, 25 cents.

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TWO NEW PEAS.

Bearing until Frost.

Encouraged by the flattering and unprecedented success which Bliss's American Wonder Pea has met in all parts of the civilized globe, it affords us great pleasure to offer now **two other new** varieties by the same originator, the late Mr. CHARLES ARNOLD, of Canada, which, we are confident, will be received with no less favor.

BLISS'S ABUNDANCE.

Half dwarf, 15 to 18 inches high; foliage large, thick, full, and dark green; pods 3 to 3½ inches long, roundish and well filled, containing six to eight large wrinkled peas of excellent quality.

It ripens second early, being fit for the table about one week after the earliest kinds. The most striking feature of this variety is its remarkable tendency for branching directly from the roots, forming a veritable bush. Many plants throw out *six and more* branches, each of which becomes literally covered with blossoms and pods in such ABUNDANCE that the quantity produced by each branch would be considered a bountiful yield for an entire plant of many of the older varieties. **In succession** to the *American Wonder*, for home use or market, this variety presents more desirable points than any other we are acquainted with.

Sold in packets only, 25 cts. each; 5 pkts., $1.00

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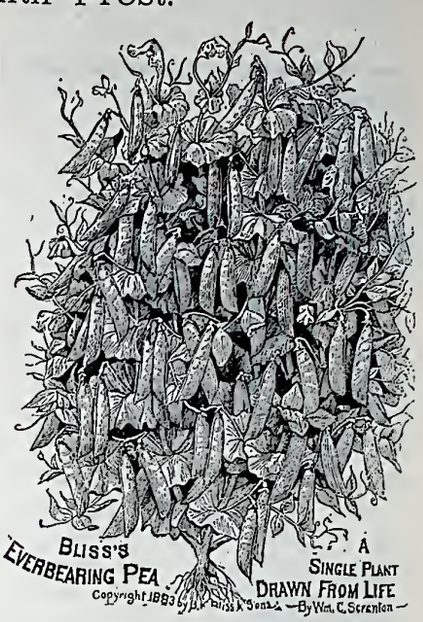
Extra Early, Very Dwarf (8 to 10 inches), Requires no Bushing, Exquisite Flavor.



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Sold in packets only, 25 cts. each; 5 pkts., $1.00.

With the Introduction of our now *world-famed* **AMERICAN WONDER,** the highest degree of *earliness* and *productiveness*, combined with excellence of quality, has been secured.

ABUNDANCE adds *another link* to the unceasing continuance of abundant and delicious supply through midsummer, while **EVERBEARING** *extends the chain of the richest* and *most valued* products of the garden and field through Summer and Autumn, thus furnishing an uninterrupted and *never failing* supply from the earliest days of Summer till the relentless frosts and winter snows lay low our plants and bid the gardener rest.

On account of the scarcity of seed of these TWO NEW VARIETIES, we shall not offer them in larger quantities than one-fifth *pint packets, 25c. each, or 5 packets for* $1.00.

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Bliss's American Racer.—After trial, in almost every section of the country, this Pea has proved very early, exceedingly productive, and in general good quality surpasses all other tall-growing early, yellow, smooth varieties. It continues in bearing several weeks, and grows from three to five feet high. Per pkt., 20 cents; pint, 45 cents; quart, 75 cents, by mail, post-paid.

One packet of each of the four varieties will be mailed to any address in the United States for 80 cents.

NEW EARLY RHUBARB—"PARAGON."

This variety, although now offered for the first time in this country, has had extensive trial in England, and has more than verified the claims made for it. It is unquestionably one of the finest varieties of Rhubarb ever offered, being the earliest of all and wonderfully prolific. The crowns and stalks are produced in such profusion that more than twice the weight can be gathered from "PARAGON" than from any other sort. It has also the qualification over all others that IT NEVER SEEDS, a claim that we have tested and found well sustained last Summer. The leaves are remarkably small, while in color the stalks are a beautiful bright red, and in flavor unsurpassed. Price, strong plants, 75 cents each; $7.50 per dozen.

HENDERSON'S NEW CELERY—WHITE PLUME.

The introduction of this new and distinct variety bids fair to so simplify the culture of Celery that the most inexperienced can grow it in proper condition for the table with the same facility as they can a Cabbage or Lettuce. The stalk and portions of the inner leaves and heart *are naturally white*, so that by closing the stalks, either by tying them together or by pressing the soil up against the plant with the hand, and again drawing up the soil with the hoe or plow, so as to keep the soil that has been squeezed against the Celery in place, the work of blanching is completed. The great advantage of this over the slow and troublesome process of blanching required by all other sorts is evident. Its eating qualities are equal to the very best of the older sorts, being crisp, solid, and of a pleasing, nutty flavor, while its white, feather-like foliage places it ahead of all others as a table ornament. Per pkt., 50 cents.

NEW FRENCH CELERY—GOLDEN-YELLOW LARGE SOLID.

A French variety, claimed to be self-blanching to a very remarkable extent, the outer ribs even assuming, without any of the tedious processes usually resorted to when blanching, a creamy-white color of a fresh and very pleasing appearance. Per pkt., 25 cents.

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A novelty from France, now offered for the first time. The shape and color of the fruit are exactly like those of an olive; in weight it ranges from six to ten pounds; the skin is smooth and extremely thin, and the flesh thick, firm, of a golden-yellow color, and of remarkably good quality. Per pkt., 25 cents.

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B. K. BLISS & SONS, 34 Barclay Street, New-York.

1884—SPRING—1884.

TREES

Now is the time to prepare your orders for NEW and RARE Fruit and Ornamental Shrubs, Evergreens, ROSES, VINES, ETC. Besides many desirable Novelties; we offer the largest and most complete general Stock of Fruit and Ornamental Trees in the U. S. Abridged Catalogue mailed free. Address ELLWANGER & BARRY, Mt. Hope Nurseries, Rochester, N. Y.

Every grower of Roses will hail with delight this exceedingly valuable new Rose, the most important addition to our list of Roses since the advent of Perle des Jardins, from which it is a sport. It is an exact counterpart of this hitherto unequaled Rose, having the same foliage, robust growth, etc., except that the color is entirely different—a rich tawny shade of saffron, something like, but deeper, than the old "Safrano," or "Mme. Falcot," commonly known as "Tea Roses." The value of so good a Rose of this color, but with every valuable characteristic of the "Perle," cannot be overestimated. It will be as largely grown as the "Perle," and much more profitably, as the buds, during the winter of 1884, sold for just double the price of "Perle." For outdoor planting, it is equally desirable, because the buds are so large and full, of splendid form, opening perfectly, and remaining so for a long time. For full description, see our illustrated catalogue for 1884. Sent free to all readers of The American Garden. Many other valuable novelties. Address

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J. T. LOVETT, Little Silver, New Jersey,
Introducer Cuthbert Raspberry and Manchester Strawberry.

CHOICE PLANTS for every one at WHOLESALE RATES.

We call especial attention to this feature of our business. We are largely engaged in sending plants long distances, and we have everything so systematized, and grow such quantities of everything, that we are enabled to reduce the expense of growing plants *to lowest cost*, and *we offer plants of all kinds* at the very lowest rates consistent with high quality. Our large illustrated catalogue, with colored plate of Eulalia Japonica Zebrina (the zebra grass), and colored plate of the wonderful new currant, "Fay's Prolific," finely illustrated with numerous engravings, etc., is just what you want if you have a garden, as it tells you where to buy the best for the least money. Give us a trial order, and see if what we say is not true. Catalogue sent free to all intending purchasers. Write for it. Mention The American Garden. Address

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NEW YELLOW COLEUS.

Golden Bedder, introduced by us last season. Brightest foliage plant for American Gardens sent out in years. Its value cannot be overestimated. Hundred and thousand rates on application. Can furnish any quantity.

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We are head-quarters and the largest growers of this valuable new lily, in the world. Full description in catalogue for 1884, which is a handsomely illustrated book. Contains colored plates of new Zebra Grass and the wonderful new Currant, "Fay's Prolific," etc. Sent free to all readers of The American Garden. Write for it. Address

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BEST MARKET PEAR.

99,999 PEACH TREES All *best varieties* of new and old Strawberries, Currants, Grapes, Raspberries, etc.

EARLY CLUSTER New Blackberry, early, hardy, good. Single hill yielded 13 quarts at one picking. Send for free Catalogue.

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13 Everblooming, or 13 Hardy, or 13 Climbing, or 7 Moss Roses all distinct sorts, labeled, by mail for $1. Many thousands of Bedding and House PLANTS & BULBS. Best and cheapest in the world. Will prove this by sending **2 Samples for 25 Cts.** Safe arrival and satisfaction guaranteed. WE LEAD in quantity, quality, size and price of all choice plants, NEW and OLD. Valuable premiums GIVEN AWAY. Beautifully illustrated and instructive catalogue free. You should order now this advertisement may not appear again.

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BERRY Plants *by mail or express at one-half Agents' prices.* BIG Strawberries, Raspberries, Currants, Blackberries and New Strawberry **MRS. GARFIELD** *A perfect flowering Seedling of Crescent,* which it far surpasses in *form, size, firmness & high flavor.* Full description in free catalogue. HALE BROS., So. Glastonbury, Ct.

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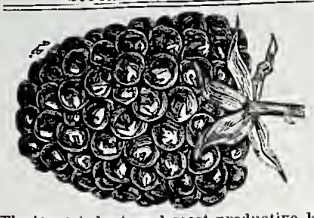

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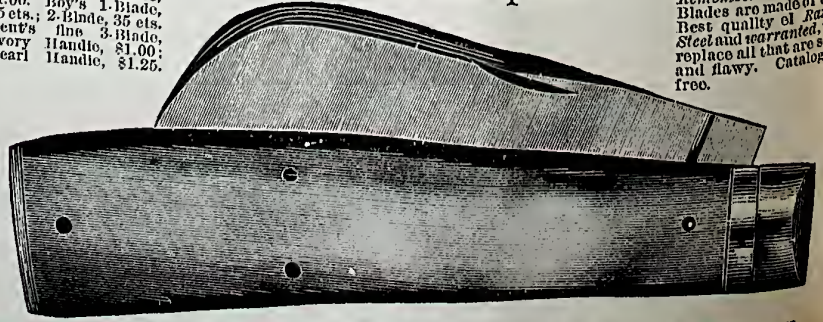

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Remarkable Crops of Potatoes, Cabbages, Strawberries, Onions, Sweet Corn, etc., Season 1883.

POTATOES.

W. F. ANDROSS, East Hartford, Conn., December 31st, writes:

"Though the conditions of the past season, agriculturally speaking, were adverse, the potato crop, which in this section was grown almost exclusively upon 'the Mapes,' was a success in spite of the drought, which prevailed to a damaging extent. The acreage of potatoes in this vicinity was more than doubled, the reason for which is attributable, I think, to the fact that the Mapes Potato Manure has so invariably insured success that the farmers felt a confidence which has never been warranted by any other method of applying fertilizers. I used, as a trial, two other fertilizers especially recommended for potatoes — 600 lbs. of one and 400 lbs. of the other; it is not necessary to speak of them further than that they both gave most unsatisfactory results. My experiments covered 14 varieties of potatoes, at all of which your formula had a chance, with good results throughout."

"A neighbor, Deacon Henry Holman, raised with the Mapes **173 Bushels** per acre of Early Rose; with Peruvian Guano, at much greater cost, only 430 bushels; and with * * * 'Hill and Drill' less than 300 bushels per acre at the same cost. Mr. Henry Lathrop raised a little over 300 bushels of Beauty of Hebron on a measured half acre with the Mapes, the condition of the land of course being good. This is the largest yield I have ever seen, and which I know to be a fact.

"There is one significant fact which may be considered: that of the hundreds who have used it here, not one but says it is the best."

POTATOES.

J. Q. ADAMS, Island, Clinton County, Pa., Dec. 1st, 1883.

Early Beauty and Late Beauty Potatoes:

From Natural Soil..... 75 bushels.
600 lbs. Mapes' Potato Manure, (400 lbs. broadcast, 200 lbs. in the hills).....270 "

Quality not excelled by anything in the County. "Am satisfied that if they had not been struck by the blight I would have had at least 500 bushels."

CABBAGES.

Mr. ADAMS also reports: 800 lbs of the Mapes — 10,000 cabbages per acre, good quality.

POTATOES.

J. S. ALLEN, Broad Brook, Conn., Jan. 1st, 1884, writes:

"I have never had a failure in my potato crop since I have used the Mapes Potato Manure (four years). Four bags to the acre will give me a better crop of potatoes than 30 loads of barn-yard manure. The Mapes manures uniformly give me better crops than my stock manure, and the effect seems to be as lasting."

STRAWBERRIES.

D. M. RANDALL, "Fruit Lawn Farm," Turner's Falls, Mass., reports:

800 lbs. per acre, Mapes' "Fruit and Vine," broadcast..... 6000 quarts.
Stable Manure (quantity not stated)..... 5000 "
Natural Soil..... 200 "

"I think your Fruit and Vine Manure the best thing I have ever used for small fruits. I have tried six different brands of fertilizers the past season; yours is far ahead. I shall use 2500 lbs. per acre next year."

ONIONS.

C. H. PEASE, South Windsor, Conn., reports on one-half acre of onions:

3000 lbs. Tobacco stems, 400 lbs. Mapes' Onion Manure, 30 bushels ashes, yielded 502 bushels of onions —

Proceeds at 70 cents a bushel..... $351.40
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Profit on one-half acre..... $249.95

Equal to $459.90 on 1004 bushels of onions per acre.

SWEET CORN.

SAMUEL R. WELLS, Wethersfield, Conn., Jan. 1st, 1884.

"My corn crop is very excellent—400 bushels of husked ears of corn from three acres of land; variety Evergreen Sweet Corn, planted early in May with a light dressing of barn-yard manure and 200 lbs. Mapes' Complete Corn Manure to the acre."

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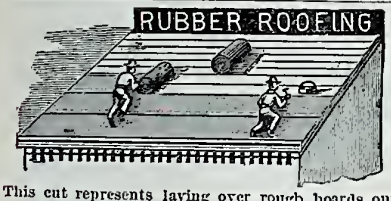

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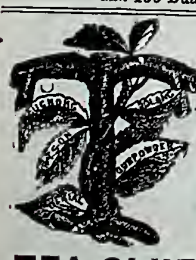

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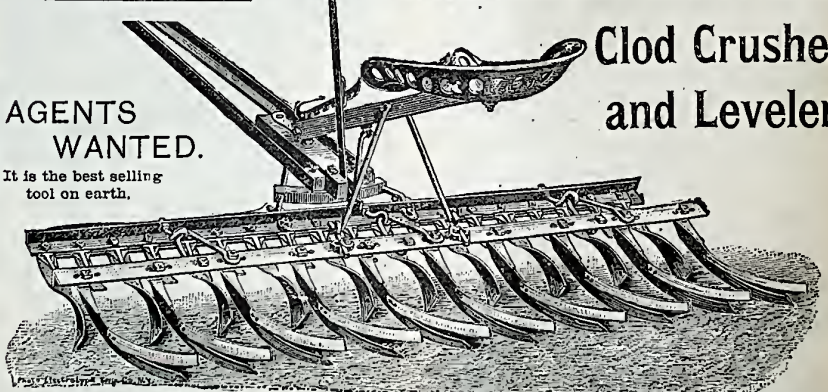

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor. B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, MARCH, 1884. No. 3.

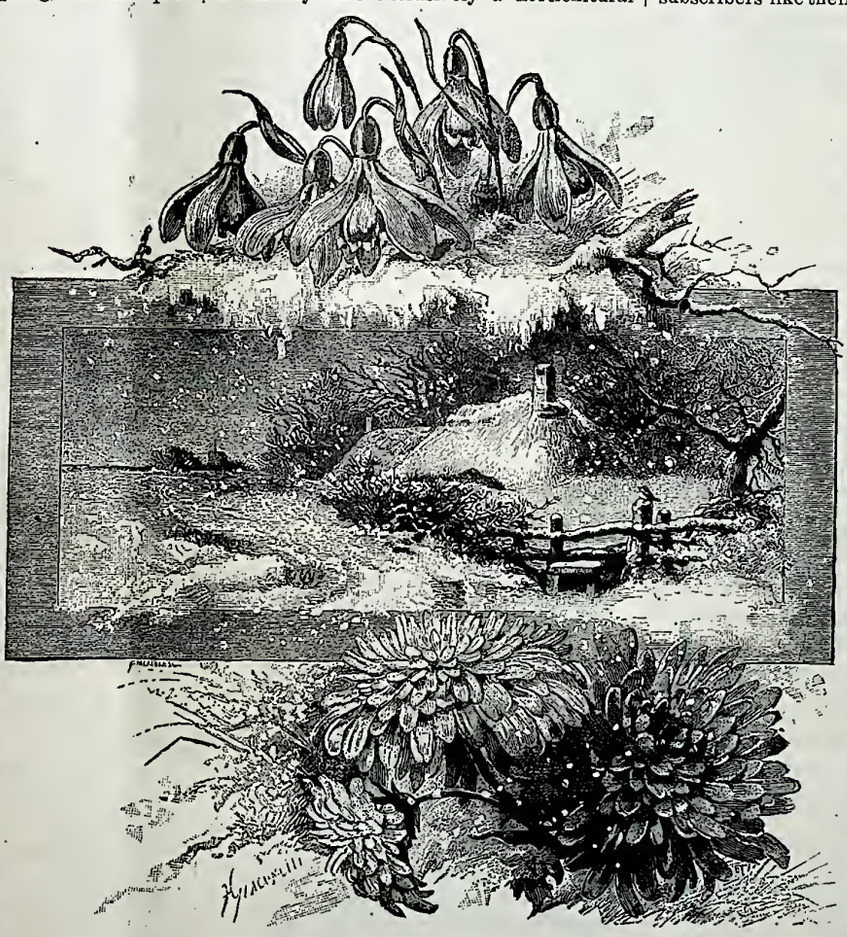
A MARCH DAY.

It seems but yesterday almost when the first snow-flakes were dropping among our bright, cheerful Chrysanthemums, reminding us in most forcible manner that summer and autumn with all their glory had departed. Higher and higher the snow heaped up in dale and field until all nature was laid at rest under the soft, sheltering down.

The gardens of many of our readers are still heavily covered with snow, yet under its warm mantle, ever-living, ever-active Nature is at work to prepare her floral children for the near spring, and the performance of their life duties.

But lo and behold! Here, on the south side of the sheltered shrubbery, piercing through leaves, and close to the edge of snow and ice, are sweetly nodding the graceful silverbells of spring's harbinger—the Snowdrops. Crocus, Winter Aconite, and many other early spring flowers are also showing the tips of their bright green leaves above the ground in the cosy nook.

While we stand gazing in admiration a dark cloud obstructs the sun; a few minutes later a heavy snow-squall beats rudely against our delicate pets, thus linking with snow-flakes the farewell of autumn's last flowers to the Snowdrops' first greeting in spring.



SNOWDROPS AND CHRYSANTHEMUMS.

SOME SUGGESTIONS.

During the past month we have received more encouraging and appreciative letters from our readers than during any other similar period. As it would be impossible to answer all individually, we acknowledge their receipt in this general way, and assure our correspondents of the high esteem in which we hold their appreciation, kind wishes, and encouraging words.

Several of these letters contained interesting information about the gardening experiences of the writers, all of which shall receive due acknowledgment in future numbers. We were especially pleased to receive valuable advice from persons eminently qualified to judge about the requirements and needs of horticultural publications. Some suggestions, however, it would be an utter impossibility to carry out, and others not without destroying what we consider the most intrinsic value and most important features of the paper.

A lady writes: "Why don't you give in your paper some information about household matters, and something to interest the children?"

To this, and to all advice about adding other departments to our journal, we have simply to say that THE AMERICAN GARDEN is strictly and exclusively a horticultural paper, and as such it aims to stand second to none.

Without concentration and specialization, excellence is impossible in any field of literature, science, art, or industry of any kind. Should we divide our attention, broaden our platform, and scatter our work over larger fields we could not expect to excel in all departments. Then there are already many excellent publications entirely or largely devoted to the topics suggested by our correspondent. Why then increase their number? In general practical gardening, however, THE AMERICAN GARDEN occupies a field of its own and does not come in competition with other existing publications. There are none in our entire country which give as thorough and constant attention to every branch of practical gardening as THE AMERICAN GARDEN.

It has been our aim from the beginning to furnish our readers a paper, every volume of which should be a complete manual of horticulture, and every number a practical and reliable guide to their monthly garden work. That our endeavors have not been in vain, our rapidly increasing subscription lists bear unmistakable witness, and that most of our subscribers like their paper no one can doubt who reads their complimentary remarks, a very few of which only we have space to publish from time to time.

To do the greatest good to the largest number of our subscribers shall be our constant endeavor in the future as it has been in the past, and we shall always be glad to receive suggestions and plans toward this end, but do not ask us to devote our columns to fashions, cookery, puzzles, and stories.

ENCOURAGING WORDS.

THE AMERICAN GARDEN cannot be praised too highly.—*J. I., Niagara Falls, South Canada.*

With short, concise, practical articles, THE AMERICAN GARDEN is brimful every time.—*M. M., Youngstown, O.*

We like THE AMERICAN GARDEN better than any horticultural paper we have ever subscribed to.—*E. H. L., Orwell, Vt.*

THE AMERICAN GARDEN, with us, was "love at first sight," and the first number is well worth the yearly price.—*T. E. B. & S., Grand Rapids, Mich.*

I get a dozen or two similar publications, but none suit me *quite* as well as THE AMERICAN GARDEN.—*E. E. R., Shiocton, Wis.*

The appearance of THE AMERICAN GARDEN has been greatly improved by the new cover, while its contents are *just as good* as ever.—*G. S. W., Rochester, N. Y.*

What I like about THE AMERICAN GARDEN is that it has a purpose, and is so clear-headed and systematic throughout—which cannot be said of many similar publications. Too much horticultural editing is slipshod.—*S. D. P., Norfolk Co., Mass.*

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The Vegetable Garden.

SEASONABLE HINTS.

"Does it pay to make a hot-bed?" is a question which presents itself to many of our readers at this season. The answer to this depends largely upon what we expect as our pay. If the sole object is to raise a few hundred vegetable plants for transplanting to the open ground in a small family garden, these can probably be obtained easier and cheaper by buying them of those who make a business of raising plants.

To make a hot-bed pay, it requires also proper and frequent care, and where this cannot be given we would not attempt to make one. Without prompt and punctual attention to the opening and closing of the sashes, watering, weeding, and thinning out of the plants, a hot-bed can never be made a success; while, on the other hand, with proper care, such a structure can be made the most interesting and profitable part of the garden—profitable in more than money value only. The delight and satisfaction derived from the first bunch of Radishes or Lettuce raised in one's own hot-bed is infinitely greater than a bushel of bought vegetables can afford.

Frames, although easily and cheaply made by any one that can handle a saw and hammer, seem sometimes difficult to procure. In the English horticultural journals we find ready-made frames of various sizes and shapes advertised. These are so arranged that they can readily be taken apart, packed compactly together for shipment, and put up again by any one, in a few minutes. They are light and yet substantial, and are fastened together with hooks and staples. If our sash-makers would furnish something similar, adapted to the needs of amateurs, they would, no doubt, find large sales.

Potatoes in Pots. The usual way of forwarding Potatoes earlier than those planted directly in the open ground consists in starting the sets in a hot-bed or in shallow boxes in a warm room, and transferring the plants to the open ground as soon as the season permits. The principal difficulty in this case is that, in transplanting, frequently a good portion of the roots become lacerated, and the young plants wilt and suffer in consequence. To avoid this we planted last year a number of single eyes in three-inch pots and placed them in a moderate hot-bed. They grew so rapidly that they had to be shifted into larger pots before the ground was in proper condition to receive them, and when finally set out, they had already formed a good many young Potatoes. They grow vigorously without a sign of wilting and matured fully a month before the earliest ones planted directly outdoors. This plan is, of course, not feasible on a large scale, but for one's own use it is quite satisfactory, and well worth the trouble of raising a few hills.

The Farm Garden is too frequently neglected until all the field crops are planted, or at best receives only a little superficial attention at odd moments. This should not be so. The garden is entitled to the first and principal care, for it is here that sustenance is raised for the most valuable the farm contains,—the farmer and his family,—against the price of which the value of the entire farm is but a grain of sand.

ECONOMICAL MANAGEMENT OF HOT-BEDS.

For the raising of plants to set out in an ordinary family garden, two hot-bed sashes of the usual size, six feet by three, will be sufficient. One of those should be started at first; the proper time for this varies, of course, according to seasons and latitudes. In a climate where Early Cabbage may be set out by the middle of April, the hot-bed should be ready to receive the seed by the 7th of March.

Six boxes or trays, four inches deep, should now be provided of such size as will completely fill the bed. In one of these boxes sow Beets, two varieties, and in another Lettuce. These should be sowed quite thinly, as they will not be transplanted until put outdoors. In another box sow Early Cabbage, Early Cauliflower, and two varieties of Tomatoes,—sowing the latter across the box, with the Cabbage or Cauliflower at either end. Place this box across the middle of the hot-bed, and the Beets and Lettuce on either side. A fourth box may be sown with the hardier flowering annuals, like Phlox Drummondii, Verbena, etc.

If the heat is sufficient, the Cabbages and Cauliflowers will be ready to transplant in from two to three weeks, and should be pricked into the two vacant boxes. The Tomatoes may be transplanted into the same box in which they grew, placing the plants three inches apart. This will give forty-eight plants to each box, which is a sufficient number of plants for a family garden.

About two weeks later, it will be necessary to harden off all plants except the Tomatoes and the flowers. The other sash should be brought in readiness by this time, and the two boxes containing Tomatoes and flowers transferred to this. The space left vacant in the first hot-bed may be covered with Potatoes cut in halves, laid cut-side down, and covered with four inches of rich earth. By the time frosty nights are nearly over, these Potatoes will have formed bushy plants, five or six inches high, with little tubers at the bottom as large as Peas. These plants, if carefully transplanted in a warm soil, will be two weeks earlier than those from sets planted in the open air. When the Cabbages, Cauliflowers, Beets and Lettuce are transplanted to the garden, the space made vacant can be used for starting Sweet Potatoes, Dahlias, Cannas, etc., or a couple of hills of Cucumbers may be planted.

The unoccupied part of the new bed may be utilized by starting Lima Beans, Squashes, Water and Musk Melons, Egg Plants, and Cucumbers, in three-inch flower pots. By hilling these with rich compost, and planting two seeds in each pot, a gain of two or three weeks can be secured, which in backward seasons and northern localities will often make all the difference between a crop and a failure.

A spent hot-bed may be devoted to a number of uses besides growing mammoth weeds. A hill of Water-melons or winter Squashes will thrive wonderfully, planted in the center of a hot-bed, and the little offsets which are found on the side of Tuberose bulbs, if planted in a spent hot-bed about June 1st and protected by the sash in September and early October, will often so increase in size as to bloom the following season.

L. B. Pierce.

DRILL OR HAND SEEDING.

To the gardener who has never given it a trial it would be a surprise to see how much evener and straighter seed can be sown with a good seed-drill than by hand. Seed-drills effect not only a saving of seed in sowing, but also of time in doing the work, and more than all in the time necessary for cultivation. They really produce better crops because they sow the seed more evenly in a straight row, and in a much narrower line than can possibly be done by hand. Less seed is required to sow the same distances, and by sowing regularly all the space is occupied, and if the seed is of good quality there is no necessity of there being vacant spots in the row.

Every gardener, and especially a beginner, knows how difficult it is to take fine seeds between the fingers and sow them evenly along the row. You are very apt to sow some places very thick, other spots thin, and skip some places entirely, while you will probably scatter the seeds—that is, instead of placing them in a narrow line, as is desirable, they will be scattered in a row two inches or so wide; this is especially the case with the lighter seeds. The uniform depth that a seed-drill covers the seeds is also an important point to be considered, as it is almost as much of a task to cover seeds to an even depth as it is to sow them.

Most of the seed-drills now manufactured are adapted not only for sowing and covering the seed, but are also of great value for cultivating the plants after they make their appearance above ground.

N. J. Shepherd.

EARLY CABBAGE.

When well grown and kept free from its enemies, Early Cabbage is a paying crop. To be sure of success, the soil should be made very rich; in fact, there is no use of planting Early Cabbage without heavy manuring. Some growers sow their seed in the fall, and winter the plants over; but I prefer sowing in February or March, and usually have plants just as early and better than if wintered over. If they are attacked by the flea, ashes or soot are sifted on them.

The land is prepared for planting by hauling and spreading all the manure on the ground I can spare, breaking the ground deep and thoroughly pulverizing it. I have never regretted working the soil too much. As soon as ready for planting, the ground is marked off in rows three feet apart. Some good fertilizers are used in the hills, which are about fifteen inches apart in the rows, and the plants set out. When I can conveniently commence to mark the ground, after four o'clock, and set the plants the same evening, I prefer to do so, as the roots will strike in the fresh soil quicker and the plants do not wilt.

I cultivate and hoe my Cabbage every few days, sometimes until they are nearly ready for market. When insects molest them, I apply a sprinkling of soot, if to be had; otherwise, ashes are used. The best remedy against the Cabbage worm is to induce quick growth, and if the plants are set out early, they will be more likely to come through unmolested than if planting is deferred till the season is more advanced.

To any progressive gardener, a seed-drill is an indispensable implement.

Thos. D. Baird.

AMERICAN PEAS.

There was a time, and that quite recently, when the thought of producing here new and valuable varieties of Peas would have been considered visionary. Yet as every year almost destroys some delusions about various products which it had formerly been considered impossible to raise or manufacture on our continent, so has the preconceived idea that good Peas could come from Europe only, been indisputably disproved by subsequent events.

Several American varieties, especially those originated by that distinguished horticulturist, the late Mr. Charles Arnold, and described below, have been found not only best adapted to our climate, but are rapidly superseding many of the older kinds hitherto held in high repute in other countries.

AMERICAN WONDER.

With the exception of the Early Rose Potato, perhaps, no vegetable of American origin has ever become so widely and favorably known throughout the civilized world, as this Pea. Its remarkable dwarf habit, its earliness, productiveness, and excellent quality have introduced it into every garden of any pretension whatever; and as the pioneer of a new and distinct class of American Peas, it will always retain a renowned and permanent place in the history of horticulture. It is already everywhere so well known as not to require description here. It was produced by crossing Little Gem with Champion of England, and together with the two following varieties, raised simultaneously from the same parentage, was early selected by Mr. Arnold as one of the most valuable of the many thousand seedlings originated by him.

BLISS'S ABUNDANCE.

Season medium early. Plant half dwarf, fifteen to eighteen inches high; foliage large, thick, full, and dark green. Pods three to three and a half inches long, roundish and well filled, containing six to eight large wrinkled Peas of excellent quality. Sown at the same time as American Wonder or other very early kinds, it will just come into bearing when the first has ceased. This, as all the varieties of this strain, has a remarkable tendency for branching immediately above the main root. Its productiveness is simply enormous, and—not to make what might otherwise seem an exaggerated statement—we give herewith a photographic illustration of a single plant which bore seventy-five pods, but as many as one hundred pods have been produced on a single plant.

BLISS'S EVERBEARING.

This comes into bearing shortly before the preceding is drying off, and about a month after the earliest kinds. It grows eighteen inches to two feet in height; foliage very large, firm, and bright green; pods three to four inches long, each pod producing six to eight wrinkled Peas of extraordinary size, many of them half an inch and over in diameter. In general quality, flavor, and marrowy richness it is not surpassed by any Pea we are acquainted with.

In this variety the peculiar branching habit is still more developed, and it is not rare to see eight or ten strong branches growing to full height, all from one root-stalk. Each one of these will, under favorable conditions, bear nearly as much as an entire plant of some of the older kinds; it is therefore evident that the yield of the individual plant is almost wonderful. But of still greater value than its immense productiveness is its remarkably prolonged and continuous bearing season. We have for many years experimented with all the leading old and new varieties, but have never found one that could equal it in this respect. For late summer and autumn use when green Peas are generally scarce and in demand, it will therefore be a most desirable acquisition.

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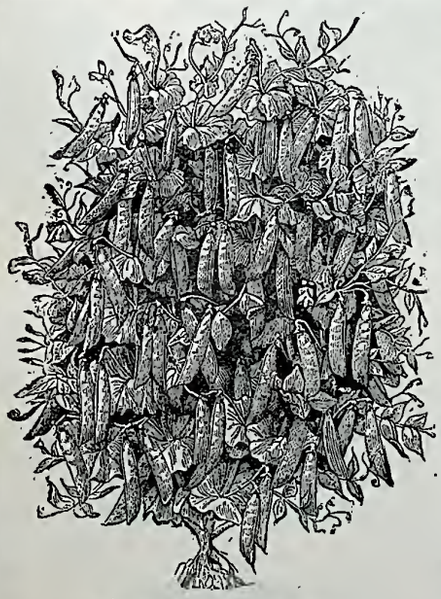
BLISS'S ABUNDANCE PEA.



BLISS'S EVERBEARING PEA.

These three varieties, *Abundance* and *Everbearing* especially, being characterized by their peculiar habit of growth, require a somewhat special treatment,—without which they will not, and can not develop their best qualities. No one would, of course, expect maximum crops on poor, shallow, and negligently tilled soil, yet even this would not prove as detrimental as planting the seed too thick. The principal conditions for obtaining best results with these Peas may be summed up as follows:

1. The individual plants *must* have sufficient room for expansion. We had them six inches apart in the rows last season, and, when full grown, found them far too much crowded, so that this year we intend to experiment with some planted a foot apart.

2. Peas planted after the ground has become dry and warm *must* be covered deep, four to six inches at least. This insures immunity against drought and produces stocky plants.

3. The pods *must* be picked clean at every picking. It is ruinous to the vigor and productiveness of the vines to leave those pods on that are too old for use, or to try to raise seed at the same time. The oftener and the cleaner Peas are picked the greater will be the yield. Seed Peas should be raised in separate rows for that purpose only.

RAPID TRANSIT FOR SOUTHERN PRODUCTS.

The *Market Journal* states that the Pennsylvania Railroad Company has projected, and will put in operation next summer, one of the most extensive schemes of its kind ever known in this country. It is the establishment of a fast, direct line for the transportation of vegetables from the South to Northern markets. The speed of the trains will not be less than twenty-eight miles per hour; and vegetables picked on the truck farms in the vicinity of Norfolk one afternoon will be landed in New York and ready for sale the next morning. Strawberries picked at Savannah, Georgia, one afternoon will be exposed for sale in this city the second morning thereafter. It is intended to put on fast lines between Chenystone and the principal Western cities, and, in this way, place Southern produce there at least three days in advance of the present time of delivery.

DRYING TOMATOES.

It is stated that in Italy the pulp of Tomatoes is dried by pressing the fruit through bags, so as to free it from seeds and skins, and then spreading it on boards and exposing it to the sun. Some of our improved fruit-drying apparatuses could, no doubt, be used to good advantage for this purpose; and as the dried pulp is as serviceable for soups, stews, etc., as the fresh fruit, this mode of preserving this excellent vegetable is well worth the attention of Tomato growers.

The Fruit Garden.

SEASONABLE HINTS.

Every year brings its new varieties of fruits claiming superiority over the older kinds, and in the localities where they originated some of these do sometimes present advantages over others, but when put to test in different soils and climates the greater proportion fail entirely. Yet in the progress of fruit culture some varieties in each class have been originated and established which adapt themselves in a remarkable degree to varying and widely differing conditions. The number of these is already considerable, and their general character is so well understood that, while a few years ago almost every fruit-grower considered his special list the best, there is now a remarkable uniformity among the lists recommended for general cultivation.

Fruit Lists.—We have before us half a dozen lists recommended by as many prominent fruit-growers and nurserymen; among them, P. M. Augur, Chas. A. Green, Hale Brothers, J. T. Lovett and others. Their choice of varieties best suited for general cultivation is so astonishingly alike, as well as nearly corresponding with our own experience, that the average of all, as given below, does not differ much from any of the individual lists.

Strawberries.—Charles Downing, Crescent, Cumberland Triumph, Kentucky. For additional varieties, Sharpless, Manchester, James Vick, Mount Vernon. The chief requisites with whatever list is chosen are rich soil, clean culture, and frequent renewal.

Red Raspberries.—Turner, Hansell, Cuthbert. Additional: Montclair, Reliance, Superb.

Black Caps.—Souhegan, Mammoth Cluster, Gregg. For canning: Shaffer's Colossal.

Yellow Raspberries.—Caroline, Brinckle's Orange.

Currants.—Fay's Prolific, red; White Grape, white; Lee's Prolific, black.

Gooseberries.—Downing, Smith, Houghton.

Blackberries.—Early Harvest, Kittatinny, Taylor.

Grapes.—The following list, recommended by the New Jersey Horticultural Society, cannot be bettered:

Worden, Concord, black; Brighton, Jefferson, red; Pocklington, Duchess, white.

The following list of tree fruits is given by Mr. P. M. Augur, State Pomologist of Connecticut:

Peaches.—Early Rivers, Mountain Rose, Oldmixon, Stump the World; for white flesh, Ward's Late and Reeve's Favorite; for yellow flesh, Crawford's Early, and Late, Smock.

Apples.—Early Harvest, Fall Pippin, Gravenstein, Fameuse, Hubbardston, Rhode Island Greening, Baldwin.

Pears.—Doyenne d'été, Bourre Giffard, Clapp's Favorite, Bartlett, Sheldon, Onondaga, Beurre Bosc, Beurre d'Anjou, Lawrence, Dana's Hovey, Josephine de Maline.

Cherries.—Early Richmond, Black Tartarian, Rockport Biggarreau.

Quinces.—Orange, Pear, Champion.

This list, although not comprising all the varieties of highest quality, cannot fail to give satisfaction over a larger area than any other that could be named.

GRAFTING GRAPEVINES.

Grafting more delicate or better varieties of Grapes upon hardier or inferior stock is at present extensively practiced in our vineyards, and still more in the phylloxera-stricken regions of Europe. The results so far have been highly satisfactory, and the finest Grapes sent to New-York market last season were from grafted vines. Any person accustomed to graft Apples can also succeed with the Grape. The main points in the operation are:

Time.—From the fall of the leaf till the rising of active circulation of sap in spring, and again after the exceedingly strong active flow of sap—say from the development of the third leaf on the young shoot—till the time of bloom. The earlier period is generally considered the best; sometimes, however, in what is called an early spring, no opportunity is given to avail oneself of it.

The Cions should come from healthy, short-jointed canes of last summer's growth, those of the size of an ordinary lead pencil, or little larger, preferred. They are best cut in the fall, and buried in the ground to keep over winter, though good success may be had with spring-cut cions.

How to Graft.—When the stock (that is, the root in the ground) is over half an inch in diameter, the ordinary "Cleft Graft" is best. Remove the soil from around the vine to the depth of three or four inches. Select a spot with smooth bark, on which the wrapping shall be made, and with a fine saw cut the vine off horizontally. Then proceed as in cleft grafting of Apple-trees, inserting two cions, each having two eyes, the lower one being on a plane with the top of the stock. Now wrap tightly the stock with some strong twine, covering with grafting clay, composed of one part fresh cow-dung and four parts of ordinary tenacious clay. The tallow and rosin contained in ordinary grafting wax seem to exert an injurious influence on the Grape. Replace the earth around the graft, so that the upper bud of the cion will be level with the soil. Shade or lightly mulch the surface of the ground.

In cases where the stock and cion are nearly of the same size, the so-called "whip graft" is most advantageously used, proceeding in the same manner as in that of the cleft graft after fitting the stock and cion together.

Break off all shoots, starting from the stock, in order not to rob the cion of sap. The buds of the cion frequently remain dormant till the last of June or middle of July.

In northern climates, winter protection of the grafted vines by laying them down is advisable, and prudence would suggest pruning back to a few eyes the first fall, as the union between the stock and cion might be severed in the attempt to layer the entire vine.

J. B. Rogers.

PLANTING TREES.

A very large share of our fruit trees are planted in the spring, and many orchardists consider this season better for the work than fall. A summer's growth, if not rank and forced, enables the young trees to better withstand the cold, hard winter. But while we are planting in the spring, we should bear in mind that there are dangers to be guarded against during the summer, as well as the winter. In fact, I think that there are fully as many young trees lost through mismanagement and lack of care during the first spring and summer as are destroyed by severe winters.

The first mistake is usually made when setting the trees in the ground, and even many a careful, painstaking person commits a fatal error frequently in his efforts to do the work thoroughly and well. He reasons that the roots must be set well down in the ground in order to protect them against a possible drought, or even an ordinary amount of dry, hot weather. So he digs a deep hole, and puts a nice little bed of compost at the bottom, for the roots to rest in and feed on. The tree is probably set six inches lower in the ground than it stood in the nursery. All that separates the roots from the cold, hard subsoil is the little filling of muck or compost that has been put in. If the roots are not drowned out at once, they feed rapaciously upon this small but stimulating amount of nourishment for the first year, causing a rank growth of tender shoots that are illy fitted to cope with our hard northern winters. But this is not the worst: the roots soon exhaust this fertilizing material, and of course receive a decided check when they endeavor to pierce the surrounding hard-pan. The heavy top cannot be sustained, and it is almost sure to succumb to the drying winds or the frost and sun.

Another danger resulting from this practice is that unless the soil is thoroughly under-drained, water will settle in these holes, and the young trees will be water-killed within a few months after setting out. Many porous soils have a good natural drainage down to the hard-pan, and trees, set moderately shallow, would suffer very little from the effects of water if the ground were not under-drained. But when the trees are set below this porous surface soil into the hard-pan, they are virtually below water-line, and their destruction is only a question of time.

I am most emphatically in favor of shallow planting. The only objections that I have heard made against this method are that the tree stands less firmly, and that the roots are more liable to dry out during the dry, hot weather of summer. To the first objection I would say that it is a very easy matter to brace the trees, and that they ought to be braced in any case. And, as to the second objection, it is really an argument in favor of shallow planting, for the planter is then obliged to mulch his trees in order to keep them from drying out, and thorough mulching is the only safeguard for young trees. It must be kept up continuously, summer and winter.

Set trees shallow, and protect their roots until they have had time to establish themselves in a manner natural to their new surroundings, and comparatively few trees will be lost when the other conditions are at all favorable.

W. D. Boynton.

THE CRANBERRY CROP.

Mr. N. R. French, statistician of the American Cranberry Growers' Association, reported at the recent annual meeting that the crop last year was, in New England, 155,000 bushels; New Jersey, 125,000; Western States, 145,000—a total of 425,000, against 322,000 in 1882, and 461,000 in 1881. Good prices have prevailed.

CHERRIES FOR SUCCESSION.

Ripening after Strawberries, Cherries are valuable for home use and market. The Bigarreau and sweet kinds are vigorous growers and very productive—the former have firm flesh, and are not so juicy and rich as the latter, but being large and showy command a good price; but unless the weather is favorable when nearly ripe the fruit is apt to crack and rot. The Duke and Morello varieties are much less liable to injury by the weather, and are more profitable for market, and especially so for all culinary uses. The following give a succession of fruit in the order named for nearly two months: *Empress Eugenie, Knight's Early Black, Mayduke, Coe's Transparent, Black Tartarian, Governor Wood, Early Richmond, Napoleon Bigarreau, Monstrous de Mezel, Montmorency Ordinaire, Downer's Late, Reine Hortense, Love Apple or Tomato Shape, Louis Philip.—Charles Downing, in N. Y. Tribune.*

RUSSIAN APPLES.

In the year 1870 the Agricultural Department at Washington received from *Dr. Regel*, the director of the imperial botanic gardens at St. Petersburg, cions of two hundred and fifty-two different kinds of Russian Apples. All grew, and cions of them were extensively distributed—one hundred thousand having been sent out in one year.

Mr. Charles Gibb, of Abbottsford, Quebec, to whose valuable work in studying and introducing fruits adapted to northern climates we had occasion to refer previously, is now engaged in sifting their discouragingly confused nomenclature, and in determining the varieties of most value. Thus far he has selected and described ninety-three kinds, and requests all who have tested these fruits to send notes to the horticultural societies of their respective states, and thus tend to bring facts to a focus of the important question.

THE PEACH YELLOWS.

WHAT SHALL WE DO ABOUT IT?

It matters little to Peach growers whether the yellows be caused by fungi, bacteria, Peach aphis, or whatever other cause, so long as we fail to escape, manage or control it. Like the Potato fungus, it often first shows itself in a single spot,—perhaps a single branch of a mature tree, and in course of time, the entire orchard is involved in ruin. But shall we abandon growing the Peach? By no means. While the yellows in the Peach, Pear blight, the curculio, Cranberry worm and the Apple worm, are to be regarded as public calamities, yet there are compensations in better prices for the perfect fruit. Therefore, wisdom dictates to overcome these difficulties, and insure consequent reward. Our conclusions are:

1. Avoid any diseased or contaminated stock in propagation, either by seed or bud, as promptly as we would avoid the virus of scarlet fever or small-pox.

2. Seek an orchard location apart from all contaminating influences.

3. Fertilize judiciously, either by well-fined stable manure, or special chemical fertilizers adapted to the nature and wants of the Peach.

4. Lest the land should contain acidity prejudicial to healthy growth, apply occasionally twenty bushels of lime, more or less, in direct proportion to humus in the soil, to sweeten and fine the soil.

5. Secure uniform cultivation and fruitage; avoid over bearing, and also an excessive late autumn growth, also keeping trees free from the Peach-borer.

But is there any specific or cure for the yellows? We hardly dare say yes, and we will not say no. Dr. Goessmann and Prof. Penhallow have made analyses and microscopic examinations, and have advised the use of high grade muriate of potash, kieserite, and other ingredients suited to the general wants of the tree. Peach growers of the Hudson River district are using Penhallow's formula with considerable confidence. If a tree be slightly affected we would advise a heavy shortening back of the branches, and a full ration of the fertilizer advised by Prof. Penhallow, hoping for its restoration. We regard muriate of potash, sulphate of ammonia, kieserite, and superphosphate in suitable proportions, as most nearly meeting the demands of a diseased Peach-tree.

EARLY RICHMOND CHERRY.

Our experience leads us to believe that most of the failures in Peach growing are preventable. That the uniform course of clean culture till midsummer only is important. That we should prune and shorten so as to secure a proper renewal of young wood each year. That we should so manure or fertilize as to meet the demands of each year, as to growth and fruitage, increasing with the age of the tree. That we should take no other crop from the orchard after the trees commence bearing, and not allow trees to overbear.—*P. M. Augur, before the Connecticut State Board of Agriculture.*

HOW TO KEEP WINES.

Wine to keep well, and retain or improve its original flavor and taste, must, of course, be of good quality to begin with, but the importance of proper storage is frequently left out of sight in the family wine-cellar. The following remarks of Mr. A. Haraszthy, before the California State Viticultural Commissioners, give some valuable information on this subject:

"All wines should be stored in a fixed, moderate temperature, so as to prevent as much as possible a too sudden or oft-repeated expansion or contraction, either of which is detrimental to its quality. A given heat causes expansion and a renewal of fermentation; extreme cold causes contraction and neutralizes the flavor. European light wines keep best in cellars where the temperature lies between 50 and 55 degrees, while California light wines do better in a temperature varying from 65 to 70 degrees, and especially suffer when the temperature goes under 55 degrees.

"Champagne wines require the most care in keeping. They should be maintained in a temperature under 60 degrees, and the bottles should be carefully kept lying on their sides. They should never be placed on their bottoms, as from this cause they would speedily lose all their sparkle—for, standing up, the corks shrivel, dry up, and allow the carbonic acid to escape between the contracted cork and the sides of the neck of the bottle. When once stored away they should not be touched, except for removal to the table, and if they are left in the cases the mark on the upper side should be carefully attended to. This mark indicates which side of the case should be kept uppermost.

"Many persons are suprised at the appearance of some kind of deposits in wine which has put on a novel appearance, and attribute it to substances wholly foreign—either adulteration or accidental. Such is not the case. The precipitation of wine in the bottle is only the continuance of that which began in the vat, and keeping this in mind, the remedy is apparent. All wines deposit in this their last state of fermentation the coarse crust of Port, or the white, sandy deposit of Champagne, or the almost invisible sediment in nearly all other wines. But your wine, though a little faulty in appearance, is none the worse in quality—quite the contrary. These deposits are *prima facie* evidence of age within the bottle; hence an acquired mellowness and a development of its ethereal characteristics. Do not complain, therefore, when you find your wine has thrown down a slight sediment; the wine is better for it, and you can easily decant the clear wine.

"The different soils on which the vines grew and the nature of the season will sometimes cause a difference in the appearance of the crystals and other deposits. Sometimes it will adhere to the sides of the glass when poured out of the bottle; at others it will become suspended in the wine, having too much lightness to sink, and remain in suspension while the wine is acquiring its age."

The Flower Garden.

PANSY SHOW.

Three children sat in a row on a fence;
They knew not what to do;
They were tired of playing their old games,
And wished for something new.

They looked around with discontent,
'Till they saw the Pansy bed,
Where each bright blossom, in purple and gold,
Was nodding its royal head.

Then one of the children cried aloud:
"Let 's have a Pansy show;
We can dress the flowers and make them look
Just like people, you know."

They gathered the velvet Pansies,
And when dressed in green and white,
They were placed in groups on the grass—
It was truly a fairy sight.

They charged five pins admission
To see the wonderful flowers,
In this way they made great profits
And spent many pleasant hours.

In summer you will see the Pansies,
On their faces an eager glow,
Waiting to be picked by the children,
And placed in the flower show.

—*Young People.*

SEASONABLE HINTS.

Tender Plants to be raised from seed should be started during this month, in a hot-bed or in pots in a warm, sunny room. For although many tender annuals will bloom when sown outdoors in May, they will rarely come to fullest perfection unless started previously, as they require a longer season than our summers afford. A frequent cause of failure with plants raised in this way is sowing too thick, and the neglect of thinning them out sufficiently. Whenever practicable, young seedlings of all tender plants should be pricked out before their final transplanting, allowing liberal room to each plant. Half a dozen stocky, evenly developed plants are worth more than hundreds of puny and sickly ones.

Roses deteriorate generally by being left too long in the same soil. When a Rose-bush has been growing three or four years in the same place, it should be transplanted, or a part of it at least. Liberal manuring will, of course, be of some benefit,—and Roses will bear almost any quantity of manure,—but it cannot entirely take the place of transplanting to new soil.

Half-hardy Roses suffer often more in spring than during winter, just when the sap begins to start. Bushes that are not already protected should therefore have a little straw thrown over them to retard their growth, as well as to prevent their becoming sunburned.

Bulb Beds should have a part of their covering removed at the earliest opening of spring, and the remainder slightly loosened. But all should not be taken off the first warm day, else the young, tender shoots which have been pushing forth under the covering are likely to become injured by night frosts.

Hardening Plants, wintered in frames or in the house, and intended for bedding out, is of great importance at this season. Unless it is actually freezing, plenty of air should be given on all bright days. If forced now, plants cannot make a thrifty and healthy growth during summer.

GROWING PANSIES.

The beautiful plate which we present to our subscribers this month will serve to illustrate the wonderful improvements which have been made in these flowers since the days when the modest Heart's-ease growing in grandmother's garden was their highest type. The individual flowers, as portrayed on our plate, although as life-like as art and pigments can make them, fall still considerably short of the marvelous beauty of their originals.

IRIS GERMANICA.

Can I grow as beautiful flowers as these? will be the natural query of the beholder. "Yes," we answer unhesitatingly, if you really love flowers and take pleasure and delight in administering to their wants. The first condition for growing beautiful Pansies is first-class seed; for, although not *every* seed, even of the very best selections, will produce as fine flowers as their parents, the

IRIS SUSIANA.

proportion of first-class ones is by far greater in the choicer strains.

For winter and early spring blooming, the seed is sown in August, outdoors, in well-prepared beds, and for summer blooming, in February or March in pots or boxes in a warm room or in a hot-bed. It should be scattered very thinly on light, rich soil, covered about one-eighth of an inch, pressed down lightly and kept moderately moist. The soil should be shaded from the direct rays of the sun until the seed germinates and the young plants appear above ground, which will be in from ten to twelve days. As soon as large enough to handle, the seedlings have to be pricked out about two inches apart in light, rich ground, and finally transplanted outdoors ten to twelve inches apart each way.

Pansies thrive in any rich and deep soil. A compost much in favor with specialists is prepared of one part of good loamy garden soil, one part leaf-mold, and one part well-decayed cow manure. They delight in a somewhat shady position, and plenty of moisture in dry weather, with the addition of a weekly dose of liquid manure. The more flowers are cut off the more new ones will develop, and the faded ones must be scrupulously cut off every day; this is an absolute necessity when long-continued bloom is desired.

THE IRIS.

The Iris is a lovely border flower. It has a delicacy of texture unequaled by any other. Hold one up between you and the sun and it seems so fragile that you half expect to see it melt away, for its petals look as if wrought of frost, colored by some of Nature's chemicals. It ranges through many colors and shades of colors, from subdued to the most brilliant. The common varieties are a pale lavender, which is almost white, a delicate straw color, and a most intense, velvety purple. A group made up of all these colors is exquisite. It will look as if covered with gorgeous butterflies. The Iris resembles Orchids in its delicacy and brightness more than any other flower.

It is a robust, hardy plant, increasing in size and beauty year after year, when given a deep, rich soil to grow in. For use in vases, for the house, it is simply superb. The flowers remain in perfection for days after being cut.

When ordering plants for spring planting, do not forget a collection of Iris.

R. E. E.

NEW MARIGOLDS.

With the introduction of the strikingly beautiful Marigold, "Meteor," attention has been drawn to the merits and possibilities of this genus. Every year brings some new varieties, and the following, introduced from Europe, among the novelties of the season, appear to possess superior merits:

Calendula maritima, fl. pl.—The original form is a native of the Sicilian Mountains, and is dwarf, compact, and free-blooming, and cultivated as a valuable spring flower. This new double form is claimed to be superior in many respects to *C. officinalis*. Its flowers are somewhat smaller, but are so abundant that they cover the plants for two to three months, and though perennial, it is said to commence flowering two months after being sown.

C. Sicula, fl. pl.—This differs from the foregoing chiefly in the color of its flowers, which are of a brilliant orange. It is of the same bushy habit, and flowers abundantly.

C. officinalis, "Prince of Orange."—A seedling of "Meteor," which it resembles in form and general habit, but is said to far surpass it in brilliancy of coloring, especially in the intense shade of its orange stripes.

New Pansies

BLISS'S PERFECTION

DOUBLE BUTTERCUPS.

In the modern rage for flaming, glaring, bedding plants, some of the prettiest and most attractive, though modest, flowers of the garden border of former days have become almost entirely forgotten until some admirer of real beauty resurrects them from oblivion. Among these are the Double Buttercups, more frequently known as "Bachelor's Buttons," or "Fair Maids of France," the chaste beauty of which is excelled by but few hardy perennials blooming in early summer. Their flowers are produced in greatest abundance, and as they keep a long time after being cut, they are particularly desirable for vases and bouquets.

There are many species and varieties cultivated. The most desirable ones, shown in our illustration, for which we are indebted to *Gardening Illustrated*, are:

Ranunculus bulbosus fl. pl.—This has very large, yellow flowers as double as Pæony Aster. Sometimes the petals are slightly tipped with green, and two or three blossoms rise one above the other.

R. acris fl. pl. bears a great abundance of many-flowered heads of yellow, button-shaped flowers, blossoming for many weeks in succession, and if cut frequently, a continuous bloom may be had all summer.

R. repens fl. pl., its compact variety, is of neat growth, and bears a profusion of bright yellow, compact, rosette-like flowers of most perfect form.

R. aconitifolius fl. pl., with its delicate, chaste, white flowers and graceful habit, is a most beautiful plant, worthy of a place in the choicest flower border, even if it is nothing but the "White Maids of Kent," and old-fashioned.

Buttercups will grow in any soil not too light, and rather moist; but to develop to their best advantage, they require a deep, loamy soil, liberally enriched with well-decayed manure. They are increased by division of the root-stalks, planted early in spring, and should be lightly mulched during the hottest part of summer.

GROUP OF DOUBLE BUTTERCUPS.

HARDY PERENNIALS FROM SEED.

In addition to our window and greenhouse plants set out for the season, Marigolds, Drummond Phlox, Zinnias, Stocks, Asters, Petunias, and other showy annuals contribute largely to the display of our summer gardens; but, to people of moderate means or convenience, hardy perennials must be the mainstay. The easiest way in which to get up a generous stock of these is from seed. Some species, as Columbines, perennial Pinks, evergreen Candytuft, Thrift, and Gypsophila, germinate readily, and are as easily raised as most annuals in fall or spring; others, as perennial Asters, Phloxes, Gentians, Shooting Star, do not come up readily, and seldom in a full crop, but different species differ in time of coming up. For instance, I have raised as full a crop of Aster Curtisi in a month as I would of Drummond Phlox; whereas I could only get up half a crop of *A. lævis* in six months. The Crowfoot family of plants—for instance, Anemones and Clematises—come up irregularly, that is, a few at a time, for weeks, maybe months; and even Columbines appear in the same way, though more in a crop. Members of the Pea family often come in the same way; for example, Thermopsis, Astragalus, and Orobus.

American plants, more than those of the Old World, seem harder to raise from seeds. Of course, with care, patience, attention, and proper convenience, they can be raised; but without such they are troublesome. Take Twinleaf, Lungwort, Bowman's Root, and Blood Root under garden care, how hard it is to raise them; but let them drop their seeds and keep the ground clean, but do not hoe or spade it, and the next spring seedlings appear all around.

When practicable, the best time to sow perennials is in late summer or fall, as soon after you have secured good ripe seed as possible. If, like Larkspurs or Thrift, they are of kinds that will come up some days after being sown, you may sow them anywhere, and afterward thin out or transplant the seedlings; but, if of kinds not likely to vegetate before spring, it is a good plan to sow the seeds in boxes or pots, which plunge in a cold frame or in a sheltered place in the garden, with some leaves over the boxes in winter, to prevent the soil being "thrown out" by frost. Being in the earth over winter greatly assists the germination of the seeds of hardy perennial plants; and most noticeable is this in the case of bulbous plants and some trees and shrubs. And in this way I have secured a full crop at one time in spring, when from seeds of the same gathering, sown in the greenhouse in spring, I got an irregular and seldom full crop.

But, as it is spring-time now, we will consider what is best to do in this case. Sow the seeds in the way you would seeds of annuals, but in most instances be prepared to wait longer for them to germinate. If they come up thickly, thin or prick out soon. Do not let them suffer for want of water, nor burn up by warm sunshine, so long as you can place a piece of mosquito netting, newspaper, or branch over them by day to shade them a little. Coax them along by keeping them clean and cultivated, and when big enough transplant to permanent quarters.

If you have some old plants of herbaceous Veronicas, Loosestrife, Belleworts, and the like, that need dividing, I should advise you increase them by division rather than by seeds; and clumps of Anemone Japonica, Senecio Pulcher, Oenotheras Speciosa, and others with thick, fleshy, wandering roots, by pieces of the roots. Particular varieties, as of Larkspur, Pæony, or Rose Feverfew, are not always likely to be perpetuated true from seed; but natural varieties, as the white-blooming form of Erinus, are perfectly constant.

As this article has already grown longer than I anticipated, I shall defer a list of the most desirable ornamental perennials till next month

WM. FALCONER.

THE WIND-FLOWERS.

The Anemone genus embraces some of the most beautiful and easily raised flowers in our list of perennial plants, and yet they are but little known to our cultivators generally. The little wild Wood Anemone, *A. nemorosa*, with its cheerful white blossoms in early spring, is quite readily grown in partial shade. *A. sylvestris*, the Snowdrop Anemone, is one of the finest hardy border plants of which I have any knowledge. The Japan Anemone, *A. vitifolia*, is not thoroughly hardy, and should have a light covering during winter. The bright purple flowers of the *A. Pulsatilla* will cause it to be a favorite with every gardener who makes its acquaintance. Attention is thus called to a few out of the many beautiful species belonging to this genus, with a hope that the time is rapidly approaching when more notice will be accorded not only to this but to other genera that are worthy of a place in the smallest collection.—[*Josiah Hoopes, in N. Y. Tribune.*

The Window Garden
AND GREENHOUSE.

A PRETTY GREENERY.

In the endeavor to beautify our homes, the material nearest at hand, and the means within easy reach of every one, are too frequently ignored. Delicate exotics, which after a short time look sickly and forlorn, are procured at considerable expense and trouble, while it is in the power of most readers of The American Garden, not only to transfer a bit of the loveliest part of the country into their drawing-rooms, but to anticipate spring while winter is still howling about them.

Every one knows of some nook, or retired grove, where the Blood-root or *Sanguinaria canadensis*, by the middle of April, will be spreading out a delicious carpet of its white flowers. An investigation of such a nook, early in March, will reveal the fact that very near the surface of the ground may be found the roots of the Sanguinaria, in great abundance. The upper ends of the roots will be plentifully supplied with brown, elongated buds not unlike a small cigar in appearance. By exercising a little care the entire roots may be taken up without breaking or injury, and so that some of the natural soil remains attached.

It is also well to take some of the moss that is invariably found where the Blood-root abounds. With the addition of a little earth and some moss for protection, put in a box or basket, this itinerant garden may be safely transferred to any distance.

For the planting of the garden, take a large meat dish, or platter—any flat dish will do; sprinkle a little of the earth on the bottom of the dish, then place the roots upon it, keeping the long brown buds on the upper side, crowd them quite closely together, sprinkle on the remaining earth, and cover very lightly with moss. Place the dish in a sunny window, sprinkle gently with lukewarm water mornings and evenings, and you will soon be rewarded with a bed of exquisitely white flowers, which, after they have performed their mission of beauty will be succeeded by a mass of very large irregular shaped leaves at the top of rather long individual stems, giving the whole the appearance of a miniature grove.

S. H. H.

MARANTA.

This genus comprises some of the most beautiful and ornamental foliage plants known. All are natives of the tropical zone of the New as well as the Old World. Some of the species are cultivated in their native countries for their tubers, which contain considerable nutriment.

The Arrowroot of commerce is derived principally from *M. arundinacea* and *M. Indica*. Under cultivation in the greenhouse the plants require rich, peaty soil, high temperature, and plenty of water while growing, and protection from direct sun.

DIEFFENBACHIA.

Plants with light-green foliage, thickly dotted with irregularly shaped, mostly white, blotches. All are very showy and ornamental, and some of the species contain a decidedly poisonous juice. They are indigenous to tropical America, and require therefore a very warm house for successful cultivation. A compost of rich loam, leaf-mold and sand is best adapted to their growth, and for the full development of the brightest colors of their foliage, they should be grown in full light near the glass.

THE MYRTLE.

In going about the country if you come into a German settlement you will find, in

MARANTA.

almost every house, a Myrtle; and generally you will find a fine specimen of this plant, for our German friends seem to have the "knack" of growing it to perfection. I know of Myrtle trees ten and twelve years old, standing from five to six feet high, with branches reaching out two feet on each side of the straight central stem, forming a dense mass of shining foliage. One such plant

DIEFFENBACHIA.

will fill a window by itself, and is worth a dozen ordinary plants. It will afford more pleasure, and is more easily cared for. I have now in the room in which I write a Myrtle over three feet in height, and nearly as wide, and many of its branches are starred with beautiful white flowers. It stands before a window alone, on a pedestal of its own, and receives more attention from visitors than any other plant in the room.

One reason why I like it is, it is always so bright and clean, and has such a vigorous, healthy look about it. A great many plants fade and have a sere-and-yellow leaf air about them, after being kept in an ordinary living-room a little while. Not so with the Myrtle. If its leaves get dusty, take it to the sink and shower it with water. It will come from its bath looking like a child that has just had its face washed, and will seem to laugh all over with thankfulness to you for what you have done. It is an evergreen, and the branches are always covered with leaves of a dark, rich green. The color of them is like those of the Ivy, and what the Ivy is among vines for the house, the Myrtle is among plants of a shrubby character. Like the Ivy, all it asks is to have plenty of good soil to grow in, and to be kept clean. Given these attentions it will ask no more.

With a Myrtle, an Ivy, a Calla, and a Geranium, you have a quartette of plants that will afford you better satisfaction than any other four I can think of. They are the most easily cared for, and are sure of doing well in the dry air of our sitting-rooms if they are given an occasional shower-bath. Other plants will succeed tolerably well, but these will give you more pleasure, because they will be more vigorous and healthy. It will do well in a window with a northerly exposure.

It *likes* fresh air, and once a day the sash ought to be lowered to let in a current over its head. The other plants in the room and the persons in it will be all the healthier for doing this. It does not form roots very rapidly, and therefore young plants do not require large pots; but, as it increases in size, it should be occasionally shifted to larger ones. It likes a rich soil, made up of one part well-rotted manure, one part ordinary garden-mold, one part leaf-mold, with enough sharp sand added to keep the soil open and light *on the surface*. But I do not put in any sand with the soil in the bottom of the pot. I think it does better where the soil is compact about its roots. The sand added to the surface-soil keeps it from baking over, or hardening, from heavy waterings—the Myrtle likes a good deal to drink—and admits air to the roots.

It strikes readily from cuttings, if you can give them some bottom-heat, but without it I have seen them wait for weeks and weeks before putting out any roots, as if undecided about what to do. I generally strike them in clean sand. I fill a deep plate with it, add water until it is thoroughly saturated, and insert the cuttings I desire to root; then cover the sand in the plate with a glass which keeps in moisture, and place the plate on an upper shelf or bracket, where it will get the benefit of the warm air that rises. In this way I seldom fail to get cuttings to start.

Eben E. Rexford.

VALUE OF SAND.

Sand is very essential in window gardening, and it is well to have a box of it placed in the cellar where a supply can be obtained when needed. Warm it in the oven, so as not to chill the plants, and whenever the surface soil seems heavy, or a green mold forms, dig it into the pot with a large hair-pin, and mellow the soil. A large hair-pin is an excellent implement in house-gardening, as it stirs up the soil in the pots so easily, without throwing it out.

STEPHANOTIS FLORIBUNDA.

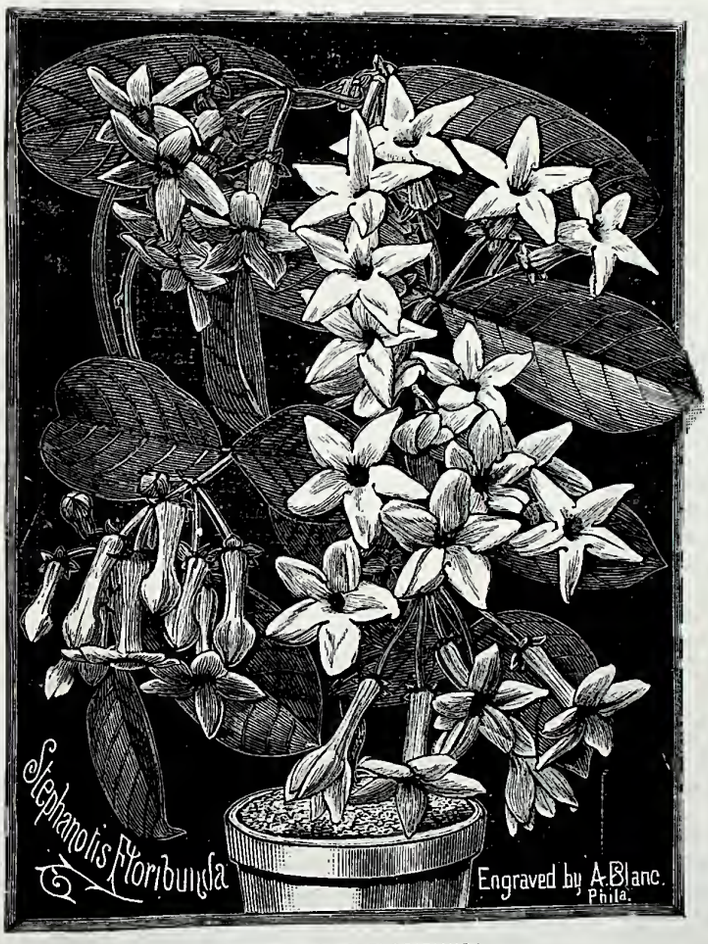
Few white-flowered plants equal this in wax-like purity, gracefulness of form, and delicate perfume. Like the Eucharis Amazonica, flowers of the Stephanotis are everybody's favorites, and they will last fresh for several days after being cut—a valuable property in the case of flowers grown for market purposes. For button-hole bouquets, about three single flowers or buds, backed by a bit of Maiden-hair Fern or frond of a Davallia, look remarkably well. They are well adapted for bouquets, and are used largely along with Orange Blossom in bridal bouquets; while, as a wreath for ladies' hair, nothing can be prettier than a cluster or two of expanded blossoms and unopened buds of Stephanotis, backed by its own thick, rich-green leaves. In forming wreaths of this description, the old or well-developed foliage only should be employed, as the fresh young leaves soon droop and wither after being cut from the plant.

The Stephanotis is easily propagated by means of cuttings made of the young wood, leaving a heel of old wood at the base. These should be inserted in a prepared cutting-pot, and covered with a bell-glass, placing the pot in a genial bottom-heat, either in a pit or propagating case; in the latter case, the bell-glass may be dispensed with. The young plants grow freely if liberally treated — that is, if planted in good fibrous loam, crocks, and leaf-mold, to which sufficient coarse sandstone grit has been added to keep the soil open. In a compost of this kind the growth made is short-jointed and robust, and much more floriferous than coarser growth made by plants in well-manured composts.

A warm and genial temperature, where it can be trained close to the glass and fully exposed to the sunlight, is most grateful to the plant. It grows freely trained on glass partitions or back walls, but rarely flowers so well as when fully exposed nearer the glass. Some growers for market cover the roofs of their forcing houses with this plant, and obtain crops of its pearly, deliciously scented flowers for nine or ten months out of twelve. It grows well in pots, in which it forms a fine exhibition plant, and it is one of the most striking of all plants thus treated; but, where quantities of cut blooms are required, pot culture is too troublesome, and does not pay half so well as when the plants are planted out and trained on the roof. They should be pruned in rather closely about December or January, and they may be started into growth as required by means of a little extra heat and moisture.

The Stephanotis is liable to become infested with mealy bugs, which spoil the looks of the foliage; and if this proliferous pest be not kept in check, the clusters of the flowers also become infested. The best means of obviating this state of things is extreme cleanliness, for mealy bugs rarely appear unless a plant has been neglected or irregularly treated with regard to moisture. Frequent syringings with water at from 80° to 100° will be found an excellent preventive of insect pests, and the plants seem to thoroughly enjoy this warm bath daily all through the summer — precautions being taken not to wet the fully expanded flowers. This seldom happens where flowers are grown for cutting, every cluster being cut as soon as ever the buds show signs of opening, and the unopened buds are rather benefited by syringing than otherwise.

A great deal depends on regular syringing, as above directed, and occasionally sponging over with soap and water. At the time the plants are cut back they should be carefully cleaned throughout, using soft soap and warm water, and syringing afterward with clean soft water.—"*C.*" *in London Garden.*



STEPHANOTIS FLORIBUNDA.

PILOGYNE SUAVIS.

One of the best vines for house culture is the Pilogyne. It has leaves shaped something like those of the Grape, but smaller, of a clear, bright green. It is a most rapid grower, branching very freely. It throws out long tendrils from the axil of each leaf, and these twine about everything with which they come in contact, thus supporting the plant without tying. It is therefore well adapted to use on trellises or for training of strings about the window or around the room. It does not seem to care particularly without much sunshine.

The only thing that has ever troubled my plant is the mealy bug, which seems to have an especial liking for it. I find but little trouble in getting rid of this pest, if I apply kerosene to him by means of a feather. The oil does not seem to injure the plant any. What it might do to more delicate plants I am not able to say, as no other plants of mine have been infested.

The Pilogyne is very graceful when grown in a hanging basket or vase. I have had the best success when I grew it in a mixture of loam and sand. Keep the plant pinched off close to the pot until plenty of branches form. It bears a small white flower which is not at all conspicuous. The plant is valuable only on account of its profuse and pleasing foliage and its rapid, graceful growth. It can be used out of doors during the summer, to climb about the veranda or porch. Give it plenty of strings, and it will form a very charming screen.

It grows readily from cuttings. I have a long box filled with it. To the box is attached a square trellis, which is completely covered with the vine. As the box is on casters, I have a portable screen for use in the parlor much more attractive, to me, than any painted screen could be.

* *

SMILAX FOR WINDOWS.

The chief cause of failure with this graceful vine as a window plant, is the dry heat and the dust of the rooms. Where these can be avoided, there is no difficulty in growing it as successfully in a room as in a greenhouse. The seed, which is slow to germinate, is sown in winter, up to March. When the young plants are three inches high, they are pricked out or potted in small pots, shifting them again to larger ones as they increase in size. A soil composed of well-decayed sods and cow-manure is most suitable for Smilax. During summer the plants may be kept outdoors in a partially shaded position, removing them to the house at the approach of cold weather.

MAHERNIA.

Mahernia odorata, which is the species principally grown, is a very neat little shrub of about two feet in height, and is one of the prettiest and most satisfactory window plants. It is a native of the Cape of Good Hope, and was introduced to cultivation in the early part of this century. Its fragrant yellow, bell-shaped flowers are borne in greatest profusion, blooming all winter, and entirely covering the plant. Ordinary potting soil, consisting of decayed manure, loam, and sand, suits it best; it should be kept rather moist, but not constantly soaked, and receive as much direct sunlight as possible.

OLEANDERS.

A French catalogue before us contains not less than forty distinct and named varieties of *Laurel Roses*—under which name they are described—varying in all shades from white and yellow to rose, carmine and purple.

Lawn and Landscape.

ESSENTIALS IN A GOOD LAWN.

Hardly anything about an estate, whether large or small, so completely marks the style of the master as the treatment, appearance, and adornment of the lawn. It is the most attractive and fascinating feature in landscape gardening; and to harmonize its trim, clean, and velvety appearance with the more rugged and broken foliage of the evergreens which border it, is the most gratifying success of the gardener.

The principle which should guide in the treatment of the lawn is very different from that which directs all other attempts to beautify and adorn the grounds—for this reason, that when the ornamentation sought is by the introduction of trees, we select the most perfect types of their species, so that the copse or plantation will assume a truly natural appearance. On the other hand, the lawn in its perfection is purely artificial in everything that makes its distinguishing characteristics. The surface must be made as smooth as possible. The turf is cultivated simply as turf, and not to grow grass for forage. In the hottest rays of the sun it must not sere nor blanch; it must be a velvety carpet of living green from early spring-time until frost and snow. The designer must have the art to conceal its artificial character, and make it appear that this elegant and emerald surface, soft and delicate enough for a fairy dance, is the most natural thing to expect to find in the midst of its fringing plantations, and that the residence was put where it is that the owner might enjoy this bit of loveliness.

A lawn must be of such a size that the proper treatment in harmonizing its surroundings will not dwarf its appearance and cause it to look like an Oak opening. When the lawn comprises hundreds of acres, and with its plantations assumes the character of a park, no specific rules can be laid down, but each case must have special treatment. Some pieces of grass, which the owners think charming lawns, are surrounded with rows of trees as stiff as a line of marines at a ship's gangway.

Most lawns are surfaced to a true plane, and have the appearance of sagging at the center. This arises from an optical illusion, to correct which a gentle swell should be given to it, and this (by a careful study of the contours before starting) can be done with little difficulty.

The next point is drainage, which, if the land is dry and gravelly, will not need any artificial aid, but it is more difficult to make a good lawn on such soils. If the subsoil is gravelly clay or hard-pan, it must be drained with pipes laid four feet deep and thirty to forty feet apart. If the soil is too light, it will be greatly improved by spreading from two to three hundred loads to the acre of clayey material. This should be such that the action of the frost will thoroughly pulverize it. In the spring it should be plowed in as deeply as can be done with the best plow and team attainable. A good dressing of peaty muck will do much to improve such a soil. To this should be added a bushel of salt and a bushel of lime to the cord, the salt being dissolved and the lime slaked with it. The muck will be the better for having been exposed to the frost of winter.

If the subsoil is clay or hard-pan, the best method of loosening it up is by deep plowing, running the plow three times in the same furrow. By this means a depth of two feet or more can be reached, and the grass will be enabled to stand the drought, more especially if the land be under-drained, as recommended. When the cost is not restricted, trench the soil from two and a half to three feet in depth, laying the drain tiles as the trenching proceeds. After the surface is well pulverized, seed down with not less than three bushels of mixed Blue Grass and White Clover to the acre—say two and a half bushels of Blue Grass and the rest Clover and fragrant Vernal Grass. Some would add Timothy or Red-top, or both, or would till the lawn the first year, or would sow Oats or other grain with the grass, as is done in laying down ground for a grass crop; but these practices are not to be recommended. If the soil is good average land, treated as described, no manure or fertilizer will be needed; but wood ashes, leached or unleached, and old lime rubbish may be freely spread on the surface and carefully incorporated with the soil. Endeavor to sow the seed just before a change of weather which indicates rain. After sowing, harrow in well and roll with a garden roller. As soon as the grass is well started, roll it one day and cut it with a lawn mower the next, and follow this up every ten days. If the lawn is finished in May, by autumn you will have a good velvety turf.

As to boundaries, most lawns bound on the highway, and are often fenced with stone walls. If the lawn is on a level with the top of the wall, thus hiding it from sight, no change is necessary, but otherwise it should be removed; and if a fence must be maintained, let it be of wire, with light iron standards. But it looks more ample and generous to merge the lawn in the sidewalk, as if it were a part of the grounds. The practice of discarding walls and fences between the highway and the lawn is becoming more general, and has many pleasant features, with many drawbacks, which are largely the result of local peculiarities, prejudices and misdemeanors.

It will be well to border the lawn with plantations of trees, the manner of doing which is to be determined by the views to be obtained from the house, which control every other consideration; but if views of distant scenery or of water cannot be incorporated into the vistas of the lawn, it is best to border with plantations of evergreens, with an irregular margin of smaller trees and shrubs, forming inviting nooks, which are delightful for their sunny warmth in spring and fall. If the trees are well grown, so as to throw out their branches close to the ground, the surface of the lawn will seem to merge with the foliage of trees with a delightful illusion.—*Col. H. W. Wilson, before the Massachusetts Horticultural Society.*

HARDINESS OF AZALEAS.

A correspondent from Halifax states that the Pontic Azaleas are quite hardy in Nova Scotia. He has grown them over ten years without winter covering, and they flower regularly every spring. *Rhododendron Catawbiense* he finds also hardy there.

Foreign Gardening.

A FLOWER-LOVING CITY.

In his interesting series of letters on "Industrial Germany," to the New-York *Tribune*, Robert P. Porter gives the following vivid sketch of a market day in Chemnitz, Saxony:

"Saturday is a good day to see the people out, for that is market day. The wares exposed for sale comprised almost everything.

"Flowers and ferns and evergreens abounded everywhere. Crowds of buyers were coming and going: men with yellow caps and blue blouses; women with wide striped gowns of every imaginable color, and red, yellow, or blue handkerchiefs over their heads, and monstrous baskets strapped to their backs—these were the laborers of the day. There were young women with their hair well braided, and sometimes parted on one side, which, with rather short dresses, bright-colored stockings, and neat shoes, gave them quite a jaunty appearance.

"The crowd were buying every conceivable thing: some trying on coats, others fitting boots, others picking out cheap finery, others buying provisions—all buying flowers. Such people for flowers in large quantities I never before met with. The old, the young, the plain, the pretty, the well-to-do, the poor, all left the market laden with flowers—mostly wreaths. To see them one would think the town of Chemnitz had gone wreath-mad. The mania appeared in every form. Old brown-skinned matrons moved slowly home laden with baskets of provisions on their backs and wreaths of flowers encircling their arms; young girls briskly left the market carrying their purchases, and around their necks and arms garlands of flowers; little children trudged home lugging huge baskets, but also laden with wreaths of flowers. I actually saw several poor women without shoes and stockings buying wreaths of flowers."

THE FLORA OF JAPAN.

A letter in the *Evening Post* from Japan says: The flora of Japan is as extensive as the fauna is limited. We did not see a single wild animal in all our journey, and only once or twice heard a bird chirrup. But even at this unfavorable time of the year we found plenty of strange faces in the floral world, and many old friends on every hand, here growing wild, though elsewhere known to us only in flower gardens. Here was the Cyclamen, Azalea, and Camellia, all flourishing with great luxuriance. Here were great banks of Rhododendrons, thrifty Wistarias and Deutzias. Graceful Caladiums grew also by the wayside. They are much cultivated by the natives as an article of food.

The leaves of the Maples were turning, and supplied almost all the hues between the deep crimson of the Mountain Ash and the brilliant green of the shapely Bamboos. The mountains were densely wooded from base to summit, a condition rather rare than common. But the picture would not have been complete without the background of dark Conifers upon which the gorgeous colors of the deciduous trees were imposed. Once seen, these giant trees, with their trunks often hidden by Ivy, cannot be forgotten.

Horticultural Societies.

NEW YORK HORTICULTURAL SOCIETY.

The February meeting of this Society was remarkable for the large number of unusually meritorious exhibits, and the number of really beautiful plants on the tables was so great that it would have been a difficult task to decide which special exhibit deserved the palm.

The Rose table found most admirers. Hundreds of persons were constantly crowding around it, so that it was an impossibility to get near enough to it to examine its precious load carefully.

The *Sunset Rose*, of which P. Henderson & Co. exhibited a large bunch, attracted probably more attention than any other variety. There can be no doubt that the quality of the Roses grown in the vicinity of New York is constantly improving, and any one who has seen these magnificent bunches of Catherine Mermet, Cornelia Cook, General Jacqueminot, Niphetos, Saffrano, Perle des Jardins, and many others, will agree with us that their excellence has rarely, if ever, been equaled.

Orchids were represented in large numbers and great variety, the most gorgeous collection being that of Mr. William B. Dinsmore. So magnificent specimens as the half a dozen spikes of *Phalænopsis Schilleriana*, each about a yard in length, and thickly covered with flowers, had never been seen by any one present. The same collection contained a fine specimen of *Cattleya Trianei*, with unusually dark flowers; also a dozen immense spikes of *Phajus grandiflorus*, and several others. A grand specimen of *Schomburgkia undulata*, with its large, rich-colored and singularly shaped flowers was shown by William Haxtur. Isaac Buchanan, James Taplin, and George Such had also many fine specimen Orchids.

The table directly fronting the entrance was, as usually, occupied by Woolson & Co., and their exhibit of brilliant *Anemones fulgens*, Hybrid Narcissus, Freesias, and a large number of pretty spring-flowering perennial plants, gave one a bright greeting at entering the hall.

Chinese Primulas, by several exhibitors, were of astonishing size; some of the plants measured nearly two feet in diameter, and varied in all shades and forms possible in a Primrose.

Lilies of the Valley were out in great force, and delightful to behold. Most of them were growing in nine-inch pots, twenty-five to thirty "pips" to a pot.

Begonia Bruantii, a pure white variety, very compact, and a profuse bloomer, was exhibited by Hallock & Thorpe. There was also a beautiful specimen of *Begonia glaucophylla*, about twenty inches in diameter, drooping over the rim, and completely covering the pot.

A large collection of brilliant and well-grown *Cinerarias* was exhibited by David Clarkson. In *Cut Flowers*, Charles E. Parnell made, as usually, the most attractive display.

Hyacinths, Tulips, Cyclamens, Lilacs, Violets, Mignonette, Azaleas, Camellias, Amaryllis, etc., in large numbers and mostly of great excellence, and a few collections of forced vegetables made up the remainder of this fine exhibition.

Miscellaneous.

THE GENTLEMAN FARMER.

He owned the farm—at least 'twas thought
He owned, since he lived upon it,—
And when he came there, with him brought
The men whom he had hired to run it.

He had been bred to city life
And had acquired a little money;
But, strange conceit, himself and wife
Thought farming must be something funny.

He did not work himself at all,
But spent his time in recreation—
In pitching quoits and playing ball,
And such mild forms of dissipation.

He kept his "rods" and trolling spoons,
His guns and dogs of various habits,—
While in the fall he hunted coons,
And in the winter skunks and rabbits,

His hired help were quick to learn
The liberties that might be taken,
And through the season scarce would earn
The salt it took to save their bacon.

He knew no more than child unborn,
One-half the time, what they were doing,—
Whether they stuck to hoeing corn,
Or had on hand some mischief brewing

His crops, although they were but few,
With proper food were seldom nourished,
While cockle instead of barley grew,
And noxious weeds and thistles flourished

His cows in spring looked more like rails
Set up on legs, than living cattle;
And when they switched their dried-up tails
The very bones would in them rattle.

At length the sheriff came along,
Who soon relieved him of his labors,
While he became the jest and song
Of his more enterprising neighbors.

Back to the place where life began,
Back to the home from whence he wandered,
A sad if not a wiser man,
He went with all his money squandered.

MORAL.

On any soil, be it loam or clay,
Mellow and light, or rough and stony,
Those men who best make farming pay
Find use for brains as well as money.

—*Tribune and Farmer.*

A NATURAL AQUARIUM.

The Granton quarry, on the east coast of Scotland, admits the tide, so that at high water the inlet has a surface area of about ten acres, and a depth of sixty feet in some parts. The mouth of this inlet is to be so closed that fishes and other marine animals may be unable to pass through it, while the circulation of the sea water will remain unobstructed. The inclosure will form a natural aquarium, which is to be stocked with marine life of all kinds. A laboratory for students is to be placed on a barge anchored in the quarry, additional quarters being provided in a cottage on shore. This curious scientific aquarium is being established under the auspices of the Scottish Meteorological Society.

It would seem that in such an aquarium the "submarine balloon" might be used to advantage. This is a device which will be used at the forthcoming International Exhibition at Nice, and is made of steel and bronze, to enable it to resist the pressure of water at a depth of 120 meters, nearly 160 pounds to the square inch. The vessel is divided into three compartments: the upper for the commander, to enable him to direct the observatory and give explanations to the passengers, who, to the number of eight, occupy the middle compartment. They have under their feet a glass plate, enabling them to see the bottom of the ocean with its corals, fishes, grass, etc. The third compartment contains the buoyant chambers, whose power of flotation can be regulated at will. As the sea is dark at the depth of 70 meters, the observatory is to be lighted by electricity, and a telephone communication with the surface.—*The Continent.*

NEW USE FOR PAMPAS PLUMES.

Having in view the immense quantities of plumes below the standard required for purposes of ornamentation, which remain on the hands of producers unless worked up in some industry, a correspondent of the *Santa Barbara Independent* was induced lately to try, on a small scale, a series of experiments with the plumage (if it may be so called), which were sufficiently successful to convince him that there are possibilities attending the cultivation of this plant as yet unthought of.

"By experiment," he says, "I find that the feathery down possesses remarkable elasticity, and, on being removed from heavy pressure, it recovers from its compactness more readily than other vegetable fibers; but the most singular characteristic of the plumage is its buoyancy. As compared with cork there is no difference in buoyancy,—weight for weight, the displacement of water is the same, and on being submerged the plume regains the surface as quickly, and, if anything, beats the other 'light weight' in point of time. For twelve hours I could find no perceptible loss in the buoyancy properties of the plumage, not becoming waterlogged, as did other grasses experimented with in the same way for the same length of time. Now, I have formed no conclusions from the result of my crude experiment, but will bequeath to some enterprising genius the idea of constructing a camp-bed suitable for land or sea, so that even those who are compelled to 'go down to sea in ships' may take up their beds and walk—overboard, and float to realms of safety, in case of disaster."

A DAINTY TABLE DECORATION.

The unique table decoration for a dinner-party, given recently at a French castle, is thus described:

"Along the center a sheet of plate-glass, framed with a little balustrade in silver, and mounted on low, silver deer's-feet. On this glass were strewn cut flowers, with occasional groups of dancers in Dresden porcelain. A garland of odorless flowers was around each plate, and at each lady's place was an engraved crystal flask inclosing a perfume, for her to inspire in case she does not like the odor of game. The menu was engraved on ivory leaves, in red and black Gothic lettering."

THE WORLD'S SUGAR SUPPLY.

According to the *Sugar Beet*, nearly one-half of the entire world's consumption of sugar is manufactured from Beets. France produces annually over four hundred million pounds of raw Beet-sugar, and Russia over five hundred million pounds.

OUR BOOK TABLE.

Massachusetts Horticultural Society.—Schedule of prices for the year 1884. This is a most liberal premium list, $3450 having been appropriated for prizes; and competition is open to all persons.

Tea and Coffee: Their Physical, Intellectual and Moral Effects on the Human System. By Dr. A. Alcott, with notes and additions by Nelson Sizer. 16mo, 118 pages; paper, price 25 cents. Fowler & Wells, Publishers, 753 Broadway, New-York. Dr. Alcott's work on the use of Tea and Coffee, first published many years ago, has done much to call attention to the effects of the use of these articles. In the new edition Mr. Sizer has presented in the form of notes many additional facts brought out by the increased knowledge of the subject.

Hon. Marshall P. Wilder, Ph. D.—Proceedings at a banquet given by his friends on his birthday, September 22d, 1883, to commemorate the completion of his eighty-fifth year.—This is a large, very handsome volume, containing Colonel Wilder's address and all the speeches made on that memorable occasion, as well as the letters of many persons who were unable to attend. A most excellent portrait of Col. Wilder, and this, with some kind words and his autograph, written in a clear, firm hand on the fly-leaf, make the volume of precious value to us. May he be able to celebrate many, many more birthday anniversaries in health and happiness; to receive the congratulations of his many devoted friends, as well as the well-deserved gratitude of a grateful nation.

CATALOGUES RECEIVED.

Edward Gillett, *Southwick, Mass.*—Catalogue of North American Plants, Orchids, Shrubs, Climbers, Alpine, Aquatic, and Bog Plants, Rare Ferns, etc.

H. S. Anderson, Cayuga Lake Nurseries, *Union Springs, N. Y.*—Descriptive Catalogue and Price-list of all the leading new and older varieties of Small and Tree Fruits; also, ornamental trees and shrubs. It contains an elegant colored plate of the Duchess Grape, which is made a specialty here.

Woods, Beach & Co., *New Brighton, Pa.*—Illustrated and Descriptive Catalogue of Roses and Bedding Plants. This firm is head-quarters for the new *Althernanthera aurea nana*, and makes a specialty of sending Roses by mail, in which branch they have reached an enviable reputation.

John S. Collins, *Moorestown, N. Y.*—Illustrated Catalogue of Small Fruit-plants and Fruit-trees, with a colored plate of the Kieffer Pear. This is a complete list of all the most valuable varieties in cultivation. The most prominent specialty of the season is the Early Cluster Blackberry.

Hale Brothers, *South Glastonbury, Conn.*—Descriptive Price List of all the leading new and old Small Fruits. This firm pays special attention to pedigree in plants, and claims to have as carefully selected stock as can be found in the country. Mrs. Garfield Strawberry, a variety of unusual promise, and Pratt Peach, now introduced, are the leading specialties.

Woolson & Co., *Passaic, N. Y.*—Catalogue of Hardy Perennial Plants, Bulbs, Ferns, and Climbers. This is a general collection of everything of value in this line. By making an exclusive specialty of this class of plants, this firm has been able to accumulate the most complete collection of its kind in the country, and to do much to stimulate an interest in the cultivation of hardy perennial plants.

E. & J. C. Williams, *Chestnut Hill Nursery, Montclair, N. J.*—Descriptive Catalogue of Small Fruit Plants and other Nursery stock. This is what may be termed "a catalogue for the busy," as it dispenses with all unnecessary talk and with all inferior varieties, giving the reader at a glance a summary of the very best varieties only of each class. Colored plates of Fay's Prolific Currant and James Vick Strawberry. Head-quarters for Montclair Raspberry.

ANSWERS TO CORRESPONDENTS.

Zanzibar Balsam.—*Subscriber, Columbus, O.*—If "Subscriber" will send her name, the desired information will be sent by postal card. Inquiries should always be accompanied by the full address of the sender, that in case they are not of sufficient general interest they may be answered by letter.

Plants for Sunny Exposure.—*Mrs. P. O. L.*—There are comparatively few plants that will not thrive in a sunny exposure, provided the ground is deep, mellow, and rich, so that the roots may penetrate sufficiently to obtain moisture and nourishment. Fuchsias, Begonias, Variegated Caladiums, Ivy, etc., will not do in the sun.

Rose, Madame Margottin, *W. R. H. S., Forest, Ohio.*—The true variety of this name is citron-yellow, sometimes with coppery center, large, full, and very fine when perfect. It is apt to produce some malformed flowers, yet it is rarely so unsatisfactory as described. Your plant may not have sufficient root action to perfect its flowers; and a liberal supply of manure-water, when in bud, will probably correct the difficulty. And then again the plant may not be the true *Mme. Margottin*. Several other varieties, *Souvenir d'Elise* especially, behave as described.

Grapes for Utah, *C., Salt Lake City.*—To determine which varieties succeed best in so peculiar a climate as that of Utah, there can be no reliable guide but actual experiment. The list given in our Fruit Department may be of some service; but if there are any Grapes grown successfully in the vicinity, these are the varieties to be depended on, and others should be planted only as an experiment. Two-year-old vines, severely cut back, are generally the best, and early spring, as soon as the ground is fit to work, is the best season for planting.

Propagation.—*N. T. L., Astoria, N. Y.*—Without a minute knowledge of all the conditions under which plants are placed, it is impossible for any one to tell why cuttings fail to grow. A frequent cause of failure is that the cuttings are taken from weak or sickly plants; another, that the propagating bed is not warm enough—it should be kept at a temperature of from sixty to seventy degrees, and the house at about fifty degrees; then the sand in which they are placed should never become dry—no subsequent watering will make up for the damage done thereby. Fuchsias, Heliotropes, and similar plants, if under proper conditions, should root in ten days.

Japan Clover, *Lespedeza striata.*—Some item extolling the praises of this plant has been extensively published, and consequently brought a number of inquiries. This is an annual, leguminous plant of low growth, coarse, hard wooded, with small, scant foliage. It is not a Clover proper, does not look like it, and is not in the least to be compared with it as a forage plant. Being an annual, the plant dies down every year, but springs up and spreads freely the following season from self-sown seed. The principal point in its favor is that it grows in poor and sandy soil, and in such places, where nothing better can be raised, it may be of some value, and worthy of a trial, in the Southern States; it does not thrive at the North. It is not a new plant, however, which impression it seems intended to make, but has been known in our country for forty years or more. That the valuable and wonderful qualities alleged to a plant of so easy and rapid growth should not have been discovered by our progressive cultivators of the South, during half a century, does not seem very probable.

Shipping Strawberry Plants Great Distances.—*B., Kansas.*—Strawberry plants to carry well should be sent while in dormant state—that is before they have started into growth, and during cold weather. There is very little danger that they suffer from cold, when properly packed, but a great deal of becoming injured by heating. They should be packed in flat boxes of a height to correspond with the length of the plants and roots. If the plants have to be bundled, the bundles should be made small, not over twenty plants to each. It is also important that the plants be tied together evenly, so that all the crowns are in a line, and not some of them pushed up among the leaves and others buried among the roots. When packing, the box is set up edgewise, a layer of damp moss spread on the end board, and then a row of bundles of plants laid across, close together, the tops of the leaves being on a level with the upper side of the box. Another layer of moss is spread over and worked among and under the roots, and so on until the box is filled. The important point in this operation is to keep the crowns and leaves free from contact with damp moss. The roots only should be kept damp, but the leaves and hearts of the plants as dry as possible. New nail up with strips not closer together than is necessary to prevent the plants from falling out, in case the box is turned over. Plants packed in this way should, at this season of the year, keep a month. There is another precaution, however, when they arrive at their destination: Some station agents make it a rule—well meant, no doubt—to throw a pailful of water over every box of plants that arrives, and consequently kill half of them. Instruct your agent beforehand not to water your plants when they arrive.

The Acme Pulverizing Harrow, manufactured by *Nash & Bro., Millington, N. J.*, is, without exception, the most valuable and most efficient implement for leveling and pulverizing the soil that has ever been invented; in fact, there is nothing in existence at all to be compared with it. We have had personal experience with all the leading harrows introduced within the last twenty years, but would give the whole lot of them—a dozen or more—for one Acme. It would be superfluous to specify the good qualities of an implement that combines in the highest possible degree every point attainable in its class. Those who doubt the correctness of these statements had better send for the new pamphlet just issued by the above firm. This contains the testimony of over two thousand farmers who have been and are using the harrow; and if, before you have read half of it, you do not send for an Acme, don't complain if your brother farmers make farming pay better than you do.

The United States Mutual Accident Association, 320 *and* 322 *Broadway, New-York*, continues to extend its usefulness to every part of our country. With steam-boats blowing up every little while, as a matter of course, and cyclones sweeping away houses and whole villages, prudent people seek, naturally, to make some provision for themselves and their families in case of accident before it is too late. The honorable and fair dealing of this company with all its patrons has established for it so enviable a reputation, that no one who desires to insure against accident—and every wise person should—need hesitate to entrust his policy to this company.

J. B. Sardy & Son, 141 *Water street, New-York*, offer in our advertising columns $50 premium to the one who raises the largest crop of Potatoes from half an acre of ground fertilized with their Phospho-Peruvian Guano; and $25 for the next best crop. This seems an easy way to make money in addition to a paying crop. This fertilizer is highly recommended by Alfred Rose and other well-known agriculturists.

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A. *Wild Garden Seeds.*—A half-ounce packet. This novelty in flower gardening, which was first introduced as an AMERICAN GARDEN *premium*, continues to be a general favorite; and being in greater demand than ever, we retain it among our premiums. The present selection contains over 100 varieties of choice flower seeds, which, in single packets, could not be bought under $5.00.

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E. *Everlasting Flowers.*—A mixed packet of 12 distinct varieties. This class of flowers is constantly increasing in favor; and for winter bouquets and decorations generally nothing is more treasured. All are annuals of easy culture.

F. *Ornamental Grasses.*—A mixed packet of the twelve best varieties. As an accompaniment of flowers, fresh or dried, in bouquets or vases, nothing can be more appropriate and graceful than sprays of ornamental grasses.

VEGETABLE AND FARM SEEDS.

G. *Pea, Bliss' Ever-bearing.*—A sample packet of this extraordinary new wrinkled Pea, which is now, for the first time, offered to the public. For large yield, excellent quality, and continuancy of bearing, it has no equal.

H. *Cauliflower, Sea-foam.*—One packet. This valuable new variety combines more desirable qualities than any of the older kinds; in size and beauty, and especially in reliability of heading, it excels all others.

I. *Water-melon, American Belle.*—One packet, now first introduced, and of great value for home use as well as for market. It is very large, early, and of delicious quality.

J. *Oats, Black Champion.*—A sample package. These Oats were selected from a number of varieties received from Europe, and are of great promise. Selected heads have averaged one hundred and sixty-nine grains. The roots tiller more abundantly than those of any other variety, so that half the quantity of seed usually sown per acre is sufficient.

K. *Barley, Imperial.*—A sample packet. All reports about this new variety speak in highest terms of its excellence. In yield and quality alike, it is a valuable acquisition.

L. *Potato, Tremont.*—One tuber. A medium early variety of excellent quality; now offered for the first time.

M. *Potato, Iroquois.*—One tuber. A large, handsome variety of good quality, large yield, and superior keeping quality; now first offered. Both varieties received *First Class Certificates of Merit* by the London Royal Horticultural Society at the recent great International Potato Exhibition.

PLANTS AND BULBS.

N. *Helianthus multiflorus, fl. plen.* Golden Sunflower.—A hardy perennial plant of great beauty, grows about four feet high and bears a profusion of rich golden-yellow flowers of the size of Dahlias.

O. *Polyantha Rose, Mad. Cecile Brunner,* the Fairy Rose.—This is an entirely new class of Roses, of dwarf habit, with bright flowers of exquisite fragrance; hardy and effective.

P. *"Curiosity,"* a new early flowering *Pompon Chrysanthemum,* with brilliant, deep-bright crimson flowers tipped with golden yellow. This choice variety just introduced here is not for sale, but is offered only as a present to our subscribers.

Q. *Clematis coccinea* (Scarlet Clematis).—One of the most desirable climbers for covering verandas, trellises, arbors, screens, etc., as it grows from eight to ten feet in one season. Its coral-red flowers are produced in great profusion.

R. *Eulalia Japonica zebrina.*—A remarkably handsome variegated grass, perfectly hardy, growing to a height of six to seven feet, and producing tall, elegant plumes, highly ornamental for vases.

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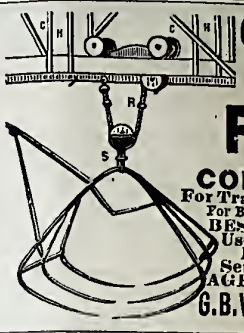

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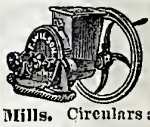

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For the *FARM AND GARDEN*, 150 pages, 300 illustrations, and a **Beautiful Colored Plate** of **Flowers**, tells **WHAT, WHEN,** and **HOW** to plant, and is full of information invaluable to all interested in gardening. MAILED FOR THREE TWO-CENT STAMPS, to cover postage.

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New Flower Seeds, New Vegetable Seeds, New Cereals, New Potatoes, New Seeds for the Farm, New Strawberries, New Raspberries, New Currants, New Blackberries, New Grapes, New and Rare Plants for the Garden and Conservatory, etc., etc.

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$500.00 IN PREMIUMS

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PRINGLE'S NEW CEREALS, From One-Quarter Acre of Ground.

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This is a cross between the Excelsior and Waterloo Oats, combining in a remarkable degree the excellent qualities of both.

The average height, as the grain stands in the field, is six feet, yet the straw is so strong and firm that it holds up well, without lodging, the tall, luxuriant heads filled with plump, heavy grains. The quality and productiveness of the grain are unexcelled, yielding from 60 to 100 bushels per acre, according to the condition and state of fertility of the land.

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PRINGLE'S ADAMANT SPRING WHEAT.

In this beardless variety we have one of the hardiest and most flinty varieties in cultivation, very productive, hardy, and vigorous. Straw yellowish-white, very stiff and erect, averaging 4 feet in height. For cultivation in North-west, Colorado, and the Pacific coast, where hard wheat is the favorite sort, we are confident that this will be particularly desirable.

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This is another beardless variety of great promise. It has been grown for the past two years by one of the most experienced wheat cultivators in Northern Vermont, in close proximity to the Green Mountains, who pronounces it the best he has ever grown. The straw averages about 4 feet, light yellow, very strong, and free from rust. Heads average 4 to 5 inches in length, somewhat tapering; kernels white, large, and plump. Very hardy and productive.

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The above varieties were first offered by us last Spring, and were extensively grown throughout the country during the past season, and furnished ample proof of their excellence and superiority over the older varieties. To induce as extended a trial as possible, we offered liberal premiums to those who produced the largest quantity of grain from one ounce of either of these varieties. The result is marvelous and shows what can be accomplished by superior seed and good cultivation. The largest yields are as follows: The **Triumph Oats** produced 168 lbs., **Adamant Wheat** 108 lbs., and **Green Mountain Wheat** 71 lbs., each, from one ounce. The full report of the awards will appear in our Novelty Sheet, published in February, and will be found of interest, as some valuable information and suggestions about grain-growing are given. A copy will be mailed to all applicants.

NEW VARIETY SPRING WHEAT FOR 1884.

Pringle's **Invincible** is a beardless variety of remarkably robust and vigorous growth; the straw is strong, stiff, well glazed, healthy, and stands up well in all kinds of weather. The heads are four to five inches long, very compact, and uncommonly well filled; berry of light amber color, plump, hard, and very heavy. It is wonderfully prolific; a bushel will easily produce fifty to seventy bushels, if properly cultivated. To obtain such results, however, the seed must be sown thinly in drills, thirty to forty pounds of seed per acre being an ample quantity. The grain ripens quickly and remarkably evenly; care should therefore be taken not to let it get over-ripe before harvesting.

As the result of many extensive trials, during the past five years, in various sections of our country, under irrigation and without, we do not hesitate to recommend this new Wheat in highest terms to every wheat grower in the world, fully convinced that it will everywhere give good satisfaction, yield profitable returns to the grower, and prove second to none for milling purposes. Price, $1.00 per lb.; 3 lbs., $2.50, by mail, post-paid. By express, at purchaser's expense, per peck, $4.00; bush., $12.00.

Every one can compete. No restrictions, except the seed must be bought of us this Spring. Descriptive circulars, with full particulars, mailed free on application.

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SUMMER-FLOWERING BULBS.

Having secured a large stock of choice Summer-flowering bulbs, we are pleased to offer the following collections at a great reduction from regular prices.

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Randolph's Hand Seed-Sower,

For sowing all kinds of small Garden Seeds with accuracy and dispatch. It is easily operated by a lady or a child of ordinary intelligence, with a little practice.

Its cost is trifling compared with the advantages resulting from its use. The saving in time and seeds will undoubtedly repay the outlay in the planting of a single week. Its construction is so simple, that it is not liable to get out of order.

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A liberal discount to agents.

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AWARDED A FIRST-CLASS CERTIFICATE BY THE NEW-YORK HORTICULTURAL SOCIETY IN THE SPRING OF 1883.

Our previous efforts to improve this ever-popular flower, although attended with unprecedented success, are eclipsed by a new strain, BLISS'S PERFECTION, that we now have the pleasure of introducing, believing it to be the nearest to perfection of anything yet offered. In the colored frontispiece of our Handbook, our artist has attempted to reproduce some of the types of this strain; but, beautiful as are these illustrations, we assure you that the originals far surpass them, and the copies, instead of being exaggerations, convey but a faint idea of the perfection of form and exquisite delicacy of shading in the flowers themselves. For variety of markings, beauty of form, large size, good substance, and splendid satiny texture, BLISS'S PERFECTION PANSY is unexcelled.

Per packet (50 seeds), 50 cents; 5 packets for $2.00.

THE SHAKESPEAREAN COLLECTION OF NEW EVER-BLOOMING CARNATIONS.

The important feature of this splendid strain of Carnations is that, if sown early in Spring, they will flower freely the first season. We can offer a limited quantity of seed saved from our own unrivaled collection, which, if treated according to directions, cannot fail to give perfect satisfaction. It has all been carefully hybridized by hand, and will produce not less than seventy-five per cent. of double flowers. Packets (containing 20 seeds, mixed colors), with complete directions for culture, 50 cents. For Plants of Shakespearean Carnations, see page 111 of our Hand-book.

Bliss's Illustrated Potato Catalogue.—Contains a list of 500 varieties of Potatoes, embracing new and very promising varieties, with explicit directions for culture, and much other valuable information respecting this indispensable esculent. 10 cents.

TWO NEW TOMATOES.

THE CARDINAL.

This new Tomato has been carefully cultivated and subjected to many tests during the past year or two, and has maintained a remarkable perfection in all that can be desired in a Tomato. It is of vigorous growth, yet comparatively compact in habit, and, weight of fruit considered, is the most productive variety known. The fruit is perfect in shape, being uniformly smooth and free from ridges, and is of a brilliant cardinal-red. Although fewness of seeds is a claim made for every new Tomato, it is a fact that by actual weight and measure tests THE CARDINAL has at least one-third less seed than the very best of the other varieties, and the thickness of pulp is most remarkable. It gives promise of being a good shipping sort, as ripe fruits picked in midsummer have kept in fine condition for ten days. The decided points of merit as described puts THE CARDINAL ahead of all other Tomatoes. Were it not so, there would be no need of adding another to the already large list of varieties.

Per pkt. of 30 seeds, 25 cents; 5 pkts., $1.00.

KING HUMBERT.

A European novelty, recommended on account of its earliness, handsome form, and delicious flavor. The raiser describes it as follows: "Of the size and shape of a large plum, scarlet, very smooth and glossy, contains but few seeds, and in flavor closely resembles that of an apple of fine quality. None of the Tomatoes known to me equal in productiveness this fine sort, which is also one of the earliest, and will probably be found well adapted for northerly districts."

Per packet, 25 cents.

SEEDS WORTH GROWING!

TWO NEW PEAS.

Bearing until Frost.

Encouraged by the flattering and unprecedented success which Bliss's American Wonder Pea has met in all parts of the civilized globe, it affords us great pleasure to offer now **two other new** varieties by the same originator, the late Mr. CHARLES ARNOLD, of Canada, which, we are confident, will be received with no less favor.

BLISS'S ABUNDANCE.

Half dwarf, 15 to 18 inches high; foliage large, thick, full, and dark green; pods 3 to 3½ inches long, roundish and well filled, containing six to eight large wrinkled peas of excellent quality.

It ripens second early, being fit for the table about one week after the earliest kinds. The most striking feature of this variety is its remarkable tendency for branching directly from the roots, forming a veritable bush. Many plants throw out *six and more* branches, each of which becomes literally covered with blossoms and pods in such ABUNDANCE that the quantity produced by each branch would be considered a bountiful yield for an entire plant of many of the older varieties. **In succession** to the *American Wonder*, for home use or market, this variety presents more desirable points than any other we are acquainted with.

Sold in packets only, 25 cts. each; 5 pkts., $1.00.

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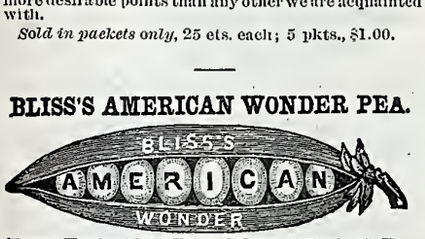
The want of a reliable first-class Pea for Summer and Autumn use has long and seriously been felt by every one. With this *new* and *remarkable* variety, we are confident to place before the public a Pea which, when sufficiently known, will everywhere be recognized as the main dependence for a Summer and Autumn crop. Season late to very late; height of vines, 18 to 24 inches; foliage very large, firm, and bright green; pods 3 to 4 inches long on the average, six to eight peas in each pod, wrinkled as the preceding; quality *unsurpassed* in sweetness as well as flavor. We do not hesitate to say that, for continuance of bearing, this variety is *unexcelled*, if *equaled*, a characteristic which gives it especial value for late Summer and Autumn use. After repeated pickings, the vines continue to be covered with blossoms and buds, developing to maturity in turn until cut down by frost, making it practically as perpetual a bearer as can be found in the Pea tribe.

Sold in packets only, 25 cts. each; 5 pkts., $1.00.

BLISS'S AMERICAN WONDER PEA.



Extra Early, Very Dwarf (8 to 10 inches), Requires no Bushing, Exquisite Flavor.

With the Introduction of our new *world-famed* **AMERICAN WONDER,** the highest degree of *earliness* and *productiveness*, combined with excellence of quality, has been secured.

ABUNDANCE adds *another link* to the unceasing continuance of abundant and delicious supply through midsummer, while **EVERBEARING** *extends the chain of the richest* and *most valued* products of the garden and field through Summer and Autumn, thus furnishing an uninterrupted and *never-failing* supply from the earliest days of Summer till the relentless frosts and Winter snows lay low our plants and bid the gardener rest.

On account of the scarcity of seed of these TWO NEW VARIETIES, we shall not offer them in larger quantities than one-fifth *pint packets*, 25c. *each, or 5 packets for* $1.00.

American Wonder. Per packet, 20c.; pint, 40c.; quart, 75c., by mail, post-paid. If by express, at expense of purchaser; pint, 30c.; quart, 50c.; peck, $2.50.

Bliss's American Racer.—After trial, in almost every section of the country, this Pea has proved very early, exceedingly productive, and in general good quality surpasses all other tall-growing early, yellow, smooth varieties. It continues in bearing several weeks, and grows from three to five feet high. Per pkt., 20 cents; pint, 45 cents; quart, 75 cents, by mail, post-paid.

One packet of each of the four varieties will be mailed to any address in the United States for 80 cents.

NEW EARLY RHUBARB—"PARAGON."

This variety, although now offered for the first time in this country, has had extensive trial in England, and has more than verified the claims made for it. It is unquestionably one of the finest varieties of Rhubarb ever offered, being the earliest of all and wonderfully prolific. The crowns and stalks are produced in such profusion that more than twice the weight can be gathered from "PARAGON" than from any other sort. It has also the qualification over all others that IT NEVER SEEDS, a claim that we have tested and found well sustained last Summer. The leaves are remarkably small, while in color the stalks are a beautiful bright red, and in flavor unsurpassed. Price, strong plants, 75 cents each; $7.50 per dozen.

New Varieties Potatoes.

Tremont, Mayflower, Iroquois, Charter Oak, Dakota Red.

Choice Varieties of 1883, etc.

Rosy Morn, Early Sunrise, Garfield, Rubicund, Tyrian Purple, Rural Blush.

For description and price of the above, send for our Illustrated Potato Catalogue, 48 pages, which contains an illustrated list of the leading varieties in cultivation, with much useful information upon their culture. Mailed to all applicants inclosing 10 cents. Regular customers free.

For further description of above and other Novelties, see our HAND-BOOK FOR THE FARM AND GARDEN (mailed for 6 cents to cover postage).

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1884—SPRING—1884.

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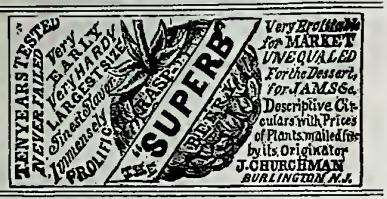

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PULVERIZING HARROW,
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BEST MARKET PEAR.

99,999 PEACH TREES All best varieties of new and old Strawberries, Currants, Grapes, Raspberries, etc.
EARLY CLUSTER
New Blackberry, early, hardy, good. Single hill yielded 13 quarts at one picking. Send for free Catalogue.
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ROSES MAKE HOME BEAUTIFUL.
13 Everblooming, or 13 Hardy, or 13 Climbing, or 7 Moss Roses all distinct sorts, labeled, by mail for $1. Many thousands of Bedding and House PLANTS & BULBS. Best and cheapest in the world. Will prove this by sending 2 Samples for 25 Cts. Safe arrival and satisfaction guaranteed. WE LEAD in quantity, quality, size and price of all choice plants, NEW and OLD. Valuable premiums GIVEN AWAY. Beautifully illustrated and instructive catalogue free. You should order now this advertisement may not appear again.
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Catalogue Free, telling all about them.
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GRAPE VINES POCKLINGTON, DUCHESS, LADY WASHINGTON, VERGENNES, MOORE'S EARLY, JEFFERSON, EARLY VICTOR, BRIGHTON, PRENTISS LARGEST STOCK in AMERICA. Prices reduced. Illus. Catalogue free. T. S. HUBBARD, Fredonia, N. Y.
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The largest, best, and most productive Early Blackberry, 3½ inches around, from Seed of selected WILSON'S EARLY.

KIEFFER HYBRID PEAR TREES.
100,000 PEACH TREES,
Strawberries, Raspberries, Grapes, etc. Catalogue with COLORED PLATES, FREE.
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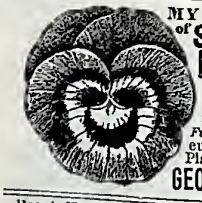

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containing a Beautiful Colored Plate, with descriptions of these, and many other fruits, &c., together with much valuable information, sent free.
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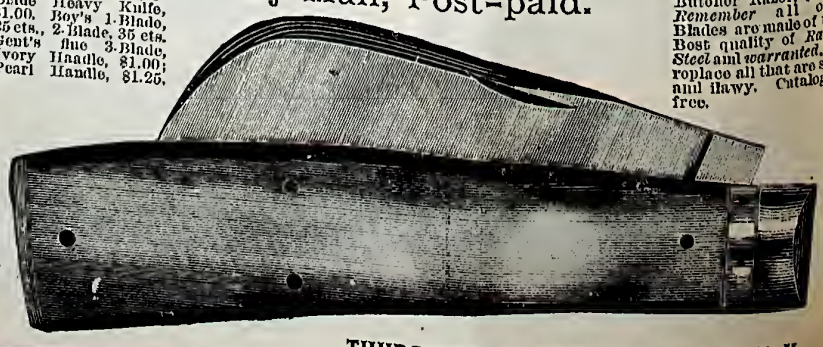
This large elegant knife (like cut), 75 cts.; one a little smaller and lighter, 50 cts.; a fine 2-Blade Jack Knife, brass lined, 60 cts.; 3-Blade Heavy Knife, $1.00. Boy's 1-Blade, 25 cts., 2-Blade, 35 cts. Gent's fine 3-Blade, Ivory Handle, $1.00; Pearl Handle, $1.25.

Lady's 1-Blade, Ivory Handle, 25 cts.; 2-Blade, 50 cts.; 3-Blade, 75 cts. A Wade & Butcher Razor, $1.00. Remember all our Blades are made of the Best quality of Razor Steel and warranted, we replace all that are soft and flawy. Catalogue free.



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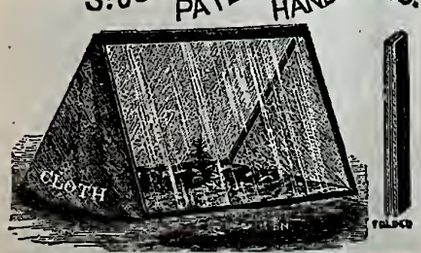

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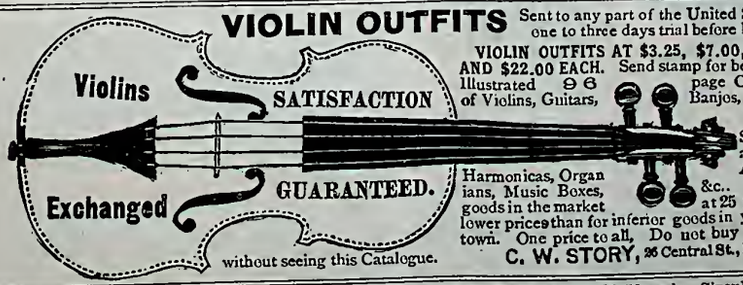

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CORN-GROWING IN CONNECTICUT WITH THE MAPES MANURES.

[From the Connecticut Farmer, February 9th, 1884.]

The following is an accurate account of the crop of corn raised the past summer on 16 acres of land, on the farm of Mr. G. P. Brinley, Newington. Eleven acres of this field was in corn the year previous, and the only manure used was the Mapes' Corn Manure. Adjoining was five acres in orchard, which had become worthless in consequence of the ravages of the canker-worm. The apple-trees were grubbed up, the land plowed and planted with corn, along with the eleven acres in corn the year previous. Below are the expenses of raising and harvesting said crop of 2038 bushels of ears of corn:

Plowing 16 acres	$32.50	Replanting	$3.00
Harrowing 11 acres twice with Thomas Smoothing Harrow	10.50	3½ bushels seed corn at 80c	2.80
Harrowing 5 acres twice with Wheel Harrow	6.00	Prout's horse-hoe, man and team, 3 days	9.00
Harrowing 5 acres with Smoothing Harrow	1.50	One-horse cultivator, man and horse, 3¼ days	6.59
Rolling 5 acres with Smoothing Harrow	2.50	Prout's horse-hoe, man and team, 3 days	9.00
Marking both ways, man and team, 3 days	9.00	5 acres plowed twice, one-horse corn plow	6.00
Fertilizer, Mapes' Corn Manure	290.00	Husking 2038 bushels corn at 6c	122.00
Applying ditto	12.00	Hauling home ditto, 1c. per bushel	20.38
Planting	9.40	Cutting and stacking	30.00
			$582.36
			256.00
Estimate of corn-stalks, 32 tons, at $8. Cr.			$329.36

Making cost of crop

There were 362 bushels nubbins and soft corn, which, deducted from 2038 bushels, leaves 1676 bushels of ears of good, sound corn, of which 2 bushels shelled yielded 59 pounds corn, which gives 891 bushels and 29 pounds corn, and makes the cost price a trifle over 36 cents per bushel. Allowing the 362 bushels of nubbins and soft corn to be worth 12½ cents per bushel for feed, which will come to $45.25, reduces the cost price of crop to a little less than 31½ cents per bushel. This crop never had a hoe in it, and there were not as many weeds in the field at the time the corn was cut as would have filled the box of a business wagon.

J. B. B.

Many of these growers use twenty tons and upward of the Mapes Manures in a season. Send postal for forthcoming pamphlet, containing reports from practical, well-known TRUCK, FRUIT, AND SPECIAL CROP GROWERS. Address

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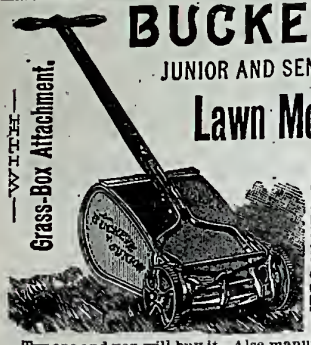

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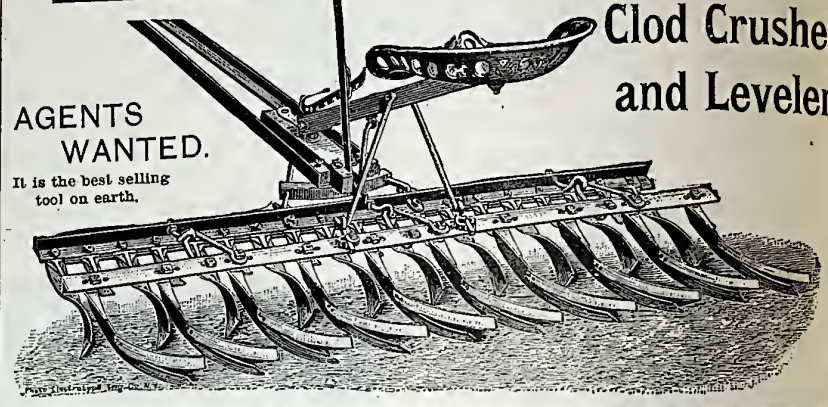

AGENTS WANTED.
It is the best selling tool on earth.

The "ACME" subjects the soil to the action of a Steel Crusher and Leveler, and to the Cutting, Lifting, Turning process of double gangs of CAST-STEEL COULTERS, the peculiar shape and arrangement of which give immense cutting power. Thus the three operations of crushing lumps, leveling off the ground, and thoroughly pulverizing the soil are performed at the same time. The entire absence of Spikes or Spring Teeth avoids pulling up rubbish. It is especially adapted to inverted sod and hard clay, where other Harrows utterly fail; works perfectly on light soil, and is the only Harrow that cuts over the entire surface of the ground.

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DO NOT BE DECEIVED. Don't let your dealer palm off a base imitation or some inferior tool on you under the assurance that it is something better, but SATISFY YOURSELF BY ORDERING AN "ACME" ON TRIAL. We will send the *double gang* Acme to any responsible farmer in the United States on trial, and if it does not suit you may send it back, we paying return freight charges. We don't ask for pay until you have tried it on your own farm.

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, APRIL, 1884. No. 4.

CONTROVERSIES.

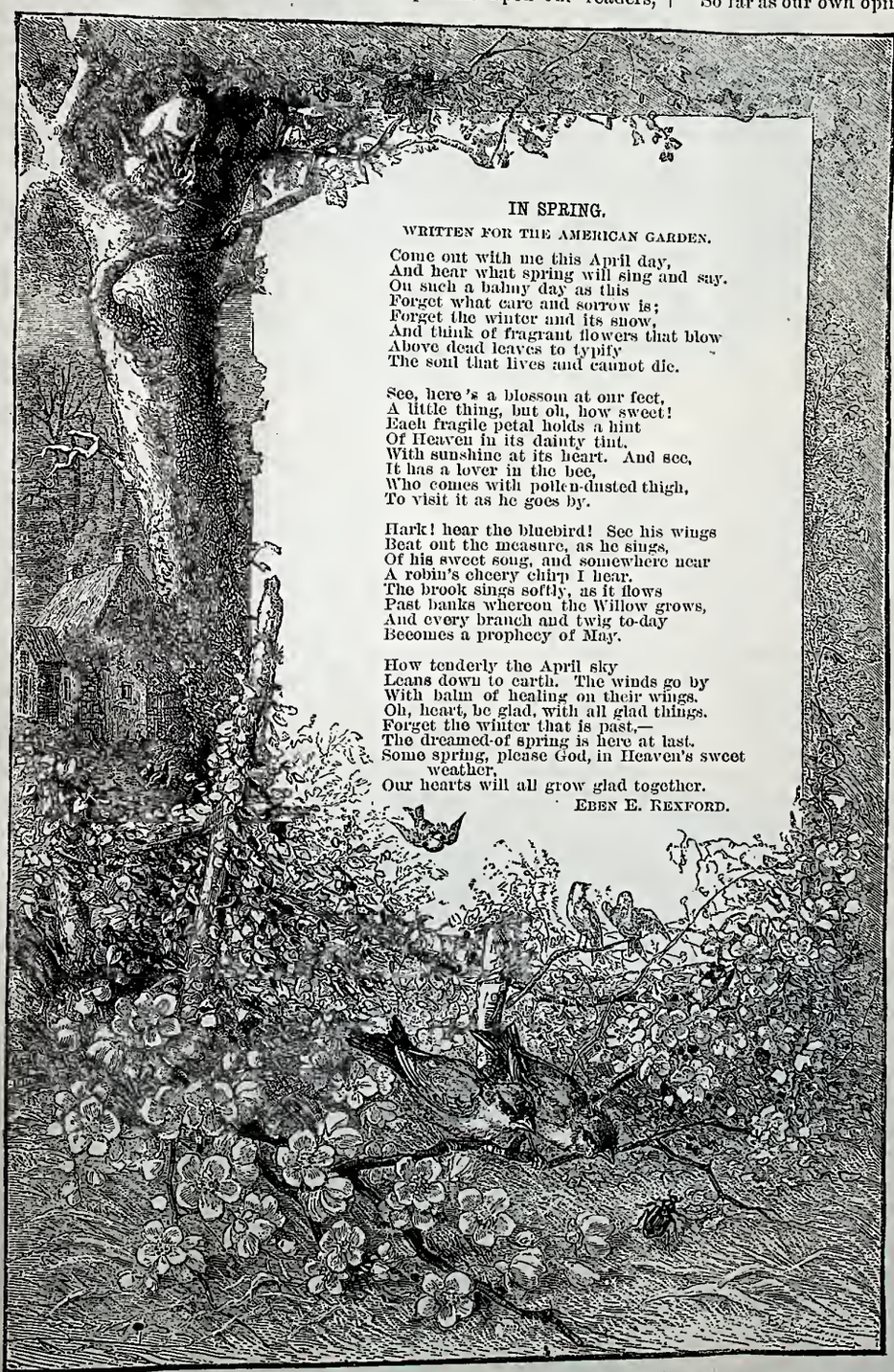
An esteemed friend objects to a statement made by one of our correspondents, and in defense of his own position sends a very long article. This we must respectfully decline to publish, not because we believe his statements less trustworthy and reliable than those of our correspondent, but because we consider the space of our pages too valuable to fill it with discussions and disputes about matters involving so great a diversity of opinion, that even those who have made a life-long study of the subjects cannot agree.

We hold that the chief object of a horticultural journal is not so much the giving of minute prescriptions for the performance of the different gardening operations and for infallible remedies for all the ills vegetable life is heir to, as to induce observation and experimenting, to stimulate thought and study, and to develop sound, clear judgment, capable to draw correct and logical conclusions. To the furtherance of this aim nothing is more detrimental than petty disputes and quarrels about diverging opinions.

The extent of our country, its diversity of soil and climate, in localities of apparent equality, even, are so great that similar or like methods may produce widely different results, and consequently lead to dissimilar conclusions. In gardening, as in politics and religion; there is an unlimited field for thought, and although persons may hold directly opposite opinions about doctrines and methods, they may be equally honest and earnest in their convictions.

We do not have the least desire to force our individual opinions upon our readers, much less to exclude or remodel statements of others because they come in conflict with our own views, unless we know them to be erroneous. Yet the fact that we publish an article over the name of a correspondent should not be taken as evidence that we agree with his opinions in every particular. It would be a monotonous paper indeed that should represent one man's views only.

So far as our own opinions and convictions are concerned we give them to our readers in our own way, for what they are worth, and if others do not agree with us we shall always be glad to have them express their reasons, if based upon tangible evidence; but we have neither inclination nor disposition to devote our columns to the discussion of theoretical and disputed points which are of no interest to the general reader.



IN SPRING.

WRITTEN FOR THE AMERICAN GARDEN.

Come out with me this April day,
And hear what spring will sing and say.
On such a balmy day as this
Forget what care and sorrow is;
Forget the winter and its snow,
And think of fragrant flowers that blow
Above dead leaves to typify
The soul that lives and cannot die.

See, here's a blossom at our feet,
A little thing, but oh, how sweet!
Each fragile petal holds a hint
Of Heaven in its dainty tint.
With sunshine at its heart. And see,
It has a lover in the bee,
Who comes with pollen-dusted thigh,
To visit it as he goes by.

Hark! hear the bluebird! See his wings
Beat out the measure, as he sings,
Of his sweet song, and somewhere near
A robin's cheery chirp I hear.
The brook sings softly, as it flows
Past banks whereon the Willow grows,
And every branch and twig to-day
Becomes a prophecy of May.

How tenderly the April sky
Leans down to earth. The winds go by
With balm of healing on their wings.
Oh, heart, be glad, with all glad things.
Forget the winter that is past,—
The dreamed-of spring is here at last.
Some spring, please God, in Heaven's sweet weather,
Our hearts will all grow glad together.

EBEN E. REXFORD.

CHEERING WORDS.

"I am delighted with THE AMERICAN GARDEN in its new form and dress. With the enterprise of its publishers and the great ability of its editor, it is sure to become more and more popular. It stands in the front rank among the first of similar publications of our day. It merits success, and it cannot have more than I desire."

MARSHALL P. WILDER, *Pres. Am. Pomological Soc.*

Every one says THE AMERICAN GARDEN is a splendid paper, and I think it should find a place on the table of every one who has a farm or garden. It is worth many times its cost.—*E. W. S., Carbon Co., Wyo. Ter.*

THE AMERICAN GARDEN is brighter than any horticultural or agricultural publication I know. Indeed, its pages are as clean, clear, and handsome as first-class paper, types, press, and a first-class pressman can make them—a model in its way. All success to THE AMERICAN GARDEN!—*L. S. A., Falls Church, Va.*

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The Vegetable Garden.

SEASONABLE HINTS.

With the professional gardener the question of actual profit is of first importance in all his investments; in the home garden, however, there are many considerations to be taken into account beyond and above a money return. "I can buy my vegetables cheaper than I can raise them," is a remark sometimes made by those not inclined to give the necessary care to their gardens, and no doubt, in many cases, past experiences justify the assertion.

Cultivating too much ground is one of the most frequent causes of unsatisfactory and unprofitable gardening and farming, and the beginner especially cannot be warned too strongly against undertaking more than he is sure to be able to take care of in the best possible manner. A small piece of ground thoroughly prepared, liberally enriched, and carefully cultivated, will often produce many times more than an area ten times as large, but tilled indifferently.

The Quality of Vegetables depends largely upon the fertility and conditions of the soil, and the attention given to the growing plants. Choice of varieties and excellence of seeds cannot counterbalance lack of fertility and cultivation.

Fertilizers.—Well-decomposed stable manure should always form the main reliance in the garden; it should be plowed under lightly and well mixed with the soil. Nevertheless, concentrated or chemical fertilizers may frequently be used to great advantage, either alone or in connection with animal manures. In our own experience, we have invariably derived most benefit from the latter method. Concentrated fertilizers should always be applied broadcast, harrowed in, and given in successive doses, so as to keep up a steady supply of plant food throughout the growing season.

Peas are among the earliest crops intrusted to the soil. In planting early Peas it should be borne in mind that the wrinkled sorts, although best in quality, are more tender than the round ones. For first plantings in cold, tenacious soils, the latter are therefore to be preferred. In warm, dry soils, however, there is little danger of rotting with the wrinkled kinds,—the *American Wonder* especially, which is the hardiest of this class,—provided the seed is not covered too deep. With all the earliest planted Peas it is advisable not to cover deeper than three inches; it is little trouble to make up this deficiency by hilling up after the vines appear above ground.

To insure a succession, early, medium and late varieties should be planted at the same time, repeating the sowings every two weeks until August.

Hot-beds made last month need frequent attention as the sun becomes more powerful. The sashes should be lifted as soon as the sun strikes them, and an hour afterward be removed altogether. Water only when the soil becomes dry, and then water thoroughly, so as to soak the entire mass of soil. In the afternoon, half an hour before the sun leaves the bed, replace the sashes, and when cold nights threaten, protect with matting, carpets or boards.

DANDELION CULTURE.

It is but a few years since the cultivation of this vegetable was undertaken, but it is making friends so rapidly that, although the amount grown annually is already very large, the supply is not equal to the demand. It is used principally as a salad, and as such it occupies a place of its own, being different in taste from anything else.

The main point in its successful cultivation is to have it in market early in the season. To meet this early demand, it is grown on benches in the greenhouse, using all available means to bring it to a marketable state as early in January as possible. From this time till the first of May, when outdoor-grown plants and other greens be-

IMPROVED DANDELION.
(One-fifth natural size.)

come marketable, there is a steady demand for forced Dandelion.

The seed of the Broad-leaved, or Improved Dandelion, which is the variety principally grown, is planted in rich soil, in rows one foot apart, as early in the spring as the ground will permit. The plants, as soon as large enough, are hoed and tended—not thinned—and kept free of weeds all the season. About the first of September the tops are hoed off lightly, after which the roots throw up a few green leaves, sufficient to mark the rows. Just before the ground freezes the roots are plowed out, taken up, and brought to a pit, or "winter house," where they are stored by setting them thickly in the ground as they grow in the field. The

BROAD LEAVED DANDELION.
(One-fifth natural size.)

temperature here rarely above 60°, and sometimes the ground freezes around the roots; there is sufficient light to green the tops a little.

From here they are transferred to the benches of the greenhouse, in quantities as required. I set out some every week, so as to keep the supply constant and uniform. After planting in the benches they grow rapidly, and are ready to harvest in four weeks from the setting. They are placed in rows five inches apart, and about as thick as they will stand in the row. The soil is mixed with plenty of fine horse manure, and a liberal dressing of wood ashes in addition.

When ready for use, the plants are in full bud, with leaves six or seven inches long. They are prepared for market by pulling up the roots, cutting them off, and picking off all dead leaves; tying them in bunches weighing eight ounces; and, finally, washing them. By this plan they are handled without loss or shrinkage.

The usual price is one dollar per dozen bunches; and, as I have never been able to raise enough, I am contemplating the building of a separate house for raising Dandelions on a larger scale. A space 3x6 feet will yield one dollar and a half every month for four months, varying somewhat according to the size of the roots, for the larger these are the heavier will be the tops. The same roots cannot be used a second time; a new stock has therefore to be raised from seed every year.

W. H. Bull.

MAKING A NEW GARDEN.

On farms where the land required for a garden spot is generally of comparatively little value, better and more satisfactory results would frequently be obtained by preparing a new plot. In this case, the proper working and mixing of sufficient quantities of fertilizers with the soil is of the greatest importance.

Well-rotted stable manure, free from grass and weed seeds, is best. The amount of benefit derived from fresh manure applied to a new garden cannot be very great during the first season. This should have been spread in the fall to obtain best results, but if not, the sooner it is done in spring the better. As soon as the ground is dry enough it should be well harrowed, and the manure plowed under. Another dressing of manure should be given then, and again plowed under. This is far better and more effective than to apply the entire quantity of manure at one time.

If you have a supply of poultry droppings, this should be worked in where Peppers, Onions, or Cabbages are planted, as it is difficult to get the soil too rich for these plants. Ashes are especially valuable for Onions and Salsify.

Rotten chips or sawdust are good for Lettuce and Radishes, and if a top-dressing is given where these are to be sown, a decided improvement in the crop will follow. Night soil can be utilized to good advantage by applying it between the rows and hoeing in.

I obtained good cuttings of Asparagus the second year from seed, by giving the bed a dressing of unleached ashes, working in well; then a good application of stable manure very early in the spring, well worked in, and a liberal quantity of night soil worked in the ground between the rows. In using either poultry manure or night soil, they should be worked in around the roots of growing plants, or be applied and worked well into the soil before sowing the seed. They are very strong fertilizers, and should not be allowed to come in direct contact with seeds or plants.

It is, of course, not as easy to obtain the very best results from entirely new ground as from land that has had more thorough cultivation; but by availing oneself of all those means, which may be had on most farms, satisfactory crops may be raised even the first year.

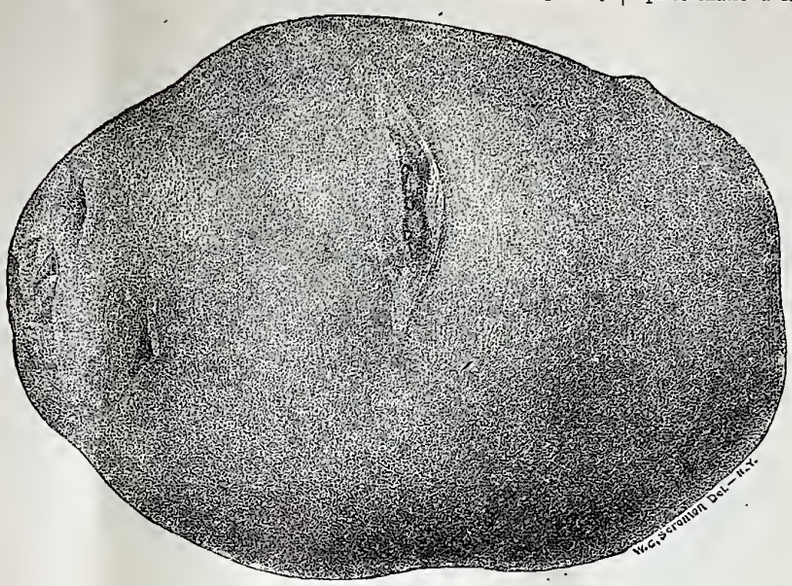
N. J. Shepherd.

NEW POTATOES.

Preminent among the new Potatoes intreduced this seasen are the varieties here named. All were awarded first-class certificates of merit by the Royal Horticultural Society ef London.

TREMONT.

A good medium-sized white Potato of oval shape, slightly flattened, with very smooth skin, and few small, flat eyes. Flesh finely grained, of snowy whiteness, and of excellent table quality. Its yield is large, and its ripening seasou a few days later than Early Roso. Those who have tried it consider it a most valuable addition to the list of first-class early Potatoos for family use. This and the following variety aro seedlings produced by crossing Silverskin with Early Rose.



TREMONT.

IROQUOIS.

Ripens medium early, is of medium to large size, irregularly round shape, yellowish-white eolor, sometimes russety; eyes few and small. In quality it stands in the first rank, eooking through quickly and eompletely, without leaving a hard eore — the common fault of most round Potatoes. When eooked it is dry, mealy, and of best quality. It yields well, and keeps in primo eondition through winter and spriug.

CHARTER OAK.

This is a cross between the "Old Long Pinkeye" and "Rand's New Peaehblow," and is remarkable for its exceedingly handsome appearanee, great yield, and extraordinary keeping quality. It is large, irregularly oval, flattened; skin white and smooth; eyes bright pink; quality first class. Vines large, vigorous, and healthy. This variety combines in an unusual degree the qualities most desirable in a market Potato for late keeping, and as such it promises to take a leading position as soon as mere extensively known.

CHARTER OAK.

SOME POINTS IN POTATO RAISING.

I do not think it advisable to say, that soil or this soil is best fer Potatoes. What is the best soil in one locality is not the best in another. It is generally said that the soil best adapted to Potatoes is a saudy loam. In my locality such a soil is best for early Potatoes, but the summer drought makes it too dry for late Potatoes. I missed a good erop of late Potatoes for a couple of years on account of drought, and in response to an inquiry an Ohio market-gardener, who was very successful in raising Potatoes, wrote me to plant them on a soil containing a fair percentage of clay. I did so, and raised good Potatoes. In most localities a light sandy loam is best for early Potatoes, because it dries and heats earlier iu the spring and is always friable, and the August drought does not eatch the early Potatoes.

In my opinion the day for raising early Potatoes on land not under-drained, is past. It is always tho first Potatoes in the market that bring the big prices, and if you do not under-drain the land yon will rarely be first nowadays. Draining gives you a great advantage, as the ground is fit for the Potatoes much earlier in the spring, and there is less danger of frost after planting. I am inclined to think that mulching would remedy drought on sandy land, judging from the experience of others.

The soil has something to do with the quality of the Potato. On heavy, wet soils the tubers are apt to be watery and insipid; on a light, sandy soil they are more mealy. A rich new soil yields Potatoes of better flavor than an old seil. But the man who raises Potatoes for market is not apt to eare for the flavor. Buyers purehase from the appearance of the outside.

I think so much of ashes as a fertilizer for the orehard that I rarely have auy for the Potatoes; but unleached ashes are a splendid fertilizer for Potatoes. I have seeu good results always from the application of limo to soils not rich in it. The same is true of bone-dust. Southern Potato raisers have a good and eonvenient fertilizer — Cotton-seed meal. Fresh barn-yard manures are apt to make a large growth of tops at the oxpense of the tubers; but I have raised number one erops of early Potatoes on a lot upon which eattle had been fed for several years.

One advantage of a sandy soil is that it almost insures Potatoes of a smooth, good form. Such a soil never gets so hard as to distort the Potatoes. It is different with a heavy clay soil. This should be kept as loose as possible. Whether or not hard ground affects the size of the Potatoes, I am not prepared to say; but I have sometimes thought it did. Surely it would if it diminished the amonut of available plant food.

I believe in hilling Potatoes, but I hill them downward; that is, I plant them deep. Potatoes must have a good depth of soil, and must either be planted deep er hilled. I consider deep planting preferable to hilling above-ground.

Deep planting requires a deep seil and deep eultivation. I believe that the soil for Potatoes should be stirred a foet deep — but never subsoiled. This brings us to another advantage of under-draining — it not only dries and loosens, bnt also deepens the soil.

I think it makes very little differenee whether large or small Potatoes are used for seed, or whether the seed is cut or not The tuber we plant is not a *seed*, but an enlargement of an underground stem. Henee, when we plant Potatoes we do not plant seeds, but *layer a stem*. The tuber is plaut food, and the more plant food for the young plant the better. But you are not sure of giviug it this by planting a large tuber, for more eyes will grow in a large than in a small one. However, I have had slightly the best results from planting large tubers, eutting them in only three or four pieees.

JOHN M. STAHL.

SPINACH.

Spinach seed must be sown at the earliest moment the condition of the soil permits, as, if deferred, the leaves are liable to become injured by the maggots, which infest the plants in summer.

The Fruit Garden.

SEASONABLE HINTS.

Whatever individual preferences there may exist as to the best season for planting fruit trees and small fruit plants, no one can go far from right by planting as early in spring as the ground becomes dry enough for bringing it into a mellow, friable condition.

Young Trees are now preferred for transplanting, by all experienced orchardists, as it is an undisputed fact that the success with trees depends far more upon their healthy and vigorous condition than their age at the time of planting.

"*For Immediate Bearing.*"—This suffix to trees and plants, enumerated in nursery catalogues, offers a most alluring temptation to beginners in fruit culture, which, when yielded to, is sure to prove but a "delusion and a snare." A moment's consideration will convince any one of a logical mind of the impossibility of the thing.

A plant is a living organism, governed by as immutable laws as we are ourselves. The roots of a tree extend about as far from the stem as the tree is high; that is, the roots of a tree ten feet in height would penetrate a circle of twenty feet in diameter. In taking up such a tree the greater part of its roots—especially the fine fibrous-feeding roots—have to be cut off, and the top of the tree in proportion, if we would have the slightest chance to make it live at all. It will be readily seen, therefore, that it requires some time before the tree can regain its former size in roots and branches, and that all its vitality will have to be spent for this purpose; and if a few abortive fruits should form, these will only be an additional tax, tapping the life-blood of the tree, to more speedily effect its ruin.

With *Raspberries* and *Blackberries* the fallacy of "plants for immediate bearing" is still more apparent. These bear fruit *only* on canes of the previous year's growth, which, in transplanting, have to be cut off, if the success of the plant is desired. The young shoots which will spring up from the roots during the season will bear fruit next year, and no power on earth can make them do so sooner.

To have fruits in the shortest possible time there is no surer way than to plant *now*, young, thrifty trees and vigorous plants, give them the best care and cultivation, and await the results. Let no one delude himself that he can make up for lost time by planting larger trees next year. You might as reasonably expect to make up for lost time in missing a railroad train, by trying to overtake it with a stage-coach. To be sure, you may send a telegram to your friends, informing them that you were "left"; and so you may buy your fruits in the market, and imagine you had picked them from your own vines and trees, but all the impatience in the world will not help you one dot.

Therefore, plant *now!*

Strawberries in solid beds or matted rows will have to be cleared of all mulch, but when growing in hills, the mulching material should only be pushed aside so as to allow the plants to grow through it, while the mulch is to remain around the plants until after bearing, to keep the ground moist and the berries clean.

PREPARING GROUND FOR GRAPE-VINES.

Few plants bear as much abuse as Grape-vines. They will grow and not seldom bear fruit, even under most unfavorable conditions; yet, to do their best, they require care and proper food as much as a man. The extent of ground which the roots of a vine occupy varies considerably according to the degree of available plant-food in the soil, and by placing the fertilizing material near the surface, the roots will rarely penetrate deeper than twelve to fifteen inches.

The most available form of plant-food for Grape-vines is pure bone of various degrees of fineness, from whole bones to that of bone-flour,—the whole bone furnishing a supply of food for years. Well decomposed cow-manure is the best kind of fertilizer to be used. Any other well-rotted manure will do, if this is not at hand. One of the maxims of success in fruit-culture may be said to be, "Never use fresh manure to incorporate in the soil for the production of the best fruit." It may be used as a mulch, provided it does not come in contact with the roots.

The ground where the vines are to be planted having been selected and marked off, if the best results are wished, spade or fork two blades deep. Throw the dirt out. Now pave the bottom with large bones, which can be purchased at any butcher-shop. Incorporate into the soil at the side of the trench or hole ten pounds of coarse bone-dust, and from two to three wheel-barrows of the rotted manure to each vine intended to be planted, and replace the soil. In setting the vine, place a thin layer—say an inch in thickness—of ordinary garden soil around each root of the vine.

Of course, good results may sometimes be obtained by less thorough preparation; but with delicate varieties, and when permanent and best success is desired, it pays to take extra pains in preparing the soil.

J. B. Rogers.

A MONSTROUS GRAPE-VINE.

The oldest, and what is believed the largest, Grape-vine within New South Wales, states an Australian paper, may be seen in the yard of the General Bourke Hotel, Paramatta. The circumference of its stem in the thickest part is eighteen inches. The latticework, which it covers, has been built after the fashion of a large summer-house, measuring thirty-five feet by thirty feet, with a height of fourteen feet. The vine, which completely invests the whole structure, is, at the present season of the year (January), draped in rich, luxuriant foliage, amid which are to be seen the luscious fruit hanging in hundreds of magnificent bunches. One bunch, a very large one, which was weighed in my presence, turned the scale at nineteen pounds. At this spectacle one's mind is instinctively reverted to the story which is told in the good old book of the two Israelites, who, between them, carried on a stick a bunch of grapes, because it was too heavy to be borne by one of them alone. It was in the year 1835 that this vine was planted, so that it must now be nearly fifty years old.

Our correspondent, *Mr. A. A. Duncliff*, of Burrawang, through whose kindness this information was received, adds:

"Probably it may excite doubts in the minds of your readers, but in many localities here, under judicious culture, both bunches and berries grow to a wonderful size; single berries being frequently as large as good sized pullet eggs, and not thought uncommon."

WOOD ASHES FOR ORCHARDS.

For orchards, says Dr. R. C. Kedzie, in the *New-York Tribune*, I regard ashes as worth more than six times the value of barnyard manure, ton for ton. When barnyard manure is composted with weed ashes, the coarse vegetable material and litter are rapidly broken down, and the manure is speedily fitted for use; there is some loss of nitrogen in the form of ammonia, but there will be no loss of mineral matter if kept from leaching by water.

Wood ashes represent all the mineral elements of vegetable growth, and contain everything the farmer must give his crops except combined nitrogen. Wood ashes will vary in composition and value with the kind of wood and the part of the tree. I will take the ash of the body-wood of the Beech-tree as representing the average of wood ashes. A ton of such ashes contains 320 pounds of potash, worth $16, and 105 pounds of phosphoric acid (insoluble), worth $5.25. Omitting all the other ash constituents, which have some value of themselves, the potash and phosphoric acid of a ton of such ashes are worth $21.25, or nearly six times the value of a ton of fresh horse-dung.

PLANT SMALL TREES.

At this season of tree-planting, the following points in favor of small trees, as given by Mr. F. K. Phœnix, deserve the careful attention of planters:

"Small trees have larger roots in proportion; (2) they cost less; (3) expressage or freight is less—expressing small trees is usually cheaper than freighting large ones, and then so much more speedy; (4) less labor handling, digging holes, etc.; (5) less exposed to high winds, which loosen roots and kill many transplanted trees; (6) planters can form heads and train them to their own liking; (7) with good care in, say, five years, they will overtake the common, larger sized trees. Without good care, better not plant any size."

SUCCESSFUL RASPBERRY GROWING.

To grow Raspberries successfully, says Mr. N. Ohmer, President of the Ohio State Horticultural Society, you must select good soil, well under-drained; let it be clay loam or sandy soil, but prefer upland clay loam. I have known them to do admirably in almost any soil, provided it is rich and not wet. Plow as you would for any other crop, the deeper the better, if your soil admits of it. Harrow well; plow out furrows six or seven feet apart, and plant in said rows three feet apart; a partial shade I find to advantage. My patches that do best are in an old orchard.

FLORIDA'S STAPLE CROPS.

B. F. Clayton, editor of the *Wine and Fruit Grower*, thinks that while Grapes may be moderately successful here, the fact remains that the great staple will be Oranges, Lemons, and Pine-apples. Small fruits, except Strawberries, will not be among the "big things" in this State.

THE MRS. GARFIELD STRAWBERRY.

One of the most vigorous growing plants in our Strawberry trial-beds is this new variety. The plants were received too late last spring to perfect any berries; yet, to judge from the results under so adverse conditions, we were very favorably impressed with its desirable qualities.

It is a seedling of the Crescent, raised by Mr. Matthew Crawford, of Ohio, and is now introduced by Hale Brothers, of South Glastonbury, Conn., who describe it as follows:

"Growth of plant healthy and vigorous, resembling its parent, the Crescent, with broader foliage, however, and not making more than one-fourth as many runners; leaves clear and bright, standing drought and frost without injury; flowers perfect, with abundant, well developed stamens; fruit stalks of medium length, stout, and usually branching. Very prolific, equal to the Crescent in quantity of fruit per acre; and while not setting quite as many berries as that variety, they average much larger and hold their size better to the end of the season. Form conical, with slight neck; color, glossy bright scarlet. Its flavor is rich, sweet, and delicious; and while not equal to the Wilson in shipping and keeping qualities, it is much firmer than any other of the very productive sorts."

THE MRS. GARFIELD STRAWBERRY.

PEACH CULTURE IN NEW ENGLAND.

At a recent meeting of the *Massachusetts Horticultural Society*, for discussion, the subject was "Peaches; their Cultivation and Varieties, and the Treatment of their Diseases." John B. Moore had been appointed to open the discussion, and said that the Peach was introduced from Persia, which corresponds in latitude to the Carolinas and Georgia. Being a native of a more southern climate than ours, it is hardly at home here, unless by a long course of acclimation it has become suited to our climate. It is one of the finest of fruits, and we all desire to grow it, and the question is how we shall do so.

The first thing is to select a suitable location, which should be on high grounds, at least partially protected from cold winds, and with a warm soil, where the wood will finish its growth and ripen early. Even there a crop cannot be expected more than two or three times in five years. The speaker had seen on a hill slope the line of destruction of fruit buds so plainly marked that twenty feet below a certain point the buds were all killed, and twenty feet above they were all good, showing the benefit of high ground.

If the land is in condition to grow thirty or forty bushels of Corn per acre, it is rich enough. If it is made rich enough for Pear-trees, it will be too rich for Peaches. When there is a large crop of fruit set on the trees, manure may be applied freely to carry it out. Trees of one year's growth from the bud are best to plant. Natural trees are not more hardy than budded. The best trees are those grown four or five feet high and with sufficient room to branch.

When planted, every side limb should be cut off. They will die if they are not cut off. Plant carefully sixteen to eighteen feet apart. It has been the custom to plant closer, but then it is inconvenient to cultivate with a horse, and also to get out the crop, and the shade below is so dense that no good fruit is produced except on the tops of the trees. More room and air give better fruit, and one bushel of good fruit is worth two of poor. He does not believe in allowing Peach-trees to branch down to the ground; after trimming off the side branches at the time of planting, so that only a bare rod is left, he heads down to a uniform height of four feet by measure. The vigorous shoots will come from the upper part, and will often make a growth of two feet in length. The weak lower shoots should be cut off during the summer, but only gradually, for the tree must have leaves to enable it to make roots.

The land must not be allowed to run to weeds or grass, but should be cultivated in some hoed crop that will not exhaust the soil. Do not crowd a Potato hill or anything else too close to the young trees; be satisfied if the crop pays the expense of cultivation and keeps the soil mellow and in good condition to absorb the rain.

The next spring, after planting, cut out all the branches but four or five of the best, and shorten these back two-thirds, always cutting to an outside bud, which will give a more spreading tree. Never cut the small branches, but only the leading ones. A year afterward pursue the same course. This will make the trunk larger, and the limbs stronger where they join it, than they would otherwise be; and, the limbs being shorter, the weight of fruit will have less leverage, and they will hang nearly to the ground without needing a prop to keep them from breaking. The small shoots should not be shortened.

The fruit must be thinned when the crop is set. The speaker never saw a workman with courage enough to thin sufficiently. A good rule is to pick off as many as you think ought to be, and then to take off half the remainder, and never have two together. The time to thin is when the fruit is as large as a Walnut, before the stem has hardened. The exhaustion of the tree is from the formation of seed and not of pulp. It is a good deal of work to thin the fruit properly, but if the trees are pruned as directed, half of it can be done while standing on the ground, and one bushel of fruit well thinned is worth three not thinned.

Stable manure should not be used; bone is undoubtedly one of the best fertilizers. The experiments of Professors Goessmann and Penhallow are of importance, apparently showing that trees once diseased with the yellows have been restored to health by the application of muriate of potash, but the speaker has not himself succeeded. Muriate of potash is undoubtedly useful as a fertilizer, and he would use it on a young orchard. The yellows is the worst drawback on the cultivation of the Peach. The only insect that is troublesome is the worm which works under the bark, and this can be kept down by putting a little mound of ashes or lime around the trunk of the tree.

In regard to varieties there is nothing new that is particularly desirable. Crawford's Early is the best kind for market, and Mr. Moore advised to plant mainly this variety, with a few Crawford's Late.

PHYLLOXERA IN FRANCE.

The Gardeners' Monthly states that the French have about abandoned all effort to preserve their vines through insecticides. The use of the American stock is found to be the simplest protection. In the first year an American cutting is planted; in the second this is used as a stock; in the third the cion bears fruit. Care must be exercised in selecting stock suitable for particular districts, for the variety that is fitting in one place is not so in another.

The Flower Garden.

APRIL.

Aloft where bonds the tall Elm's topmost crest,
Watching the sun, the robin sits and swings;
The amber light shines on his ruddy breast,
And loud his carol rings.

The Crocus-buds break into starry bloom,
And in the wind the golden Tulip rocks,
And garrulous sparrows chatter in the gloom
Of prim and rounded box.

The meadows stretching from the river show
The fresh, cool green of early springing grass,
And bending Willows droop their branches low
As winds above them pass.

A shimmering haze lies on the dreamy slopes
Of hills that rise against the lustrous West,
The waveless sea seems bright with dawning hopes
Of summer's peace and rest.

The south wind, singing through the pasture, bends
The Fern's low frond, crowning a mossy plinth;
And Violet perfume in the garden blends
With sweets of Hyacinth.

The mellow sunlight, breaking through the rifts,
Burns like a flame along the widening plain,
And down the sloping valley slowly drifts
The murmur of the rain.

The yellow Cowslips toss their cups of gold,
Where brooks go whispering through the reedy marsh;
And crows, among the blooming Maples hold
A council loud and harsh.

The plowman, whistling down the furrow, sees,
Above the thin and opal-tinted mist,
The rounded cones of budding orchard-trees,
Where bluebirds make their tryst.

The massive monarchs of the forest now
Are giant harps, melodious with song
That vibrates through each quaintly twisted bough,
Swaying the hills along.

The fragrant morn, clad in soft robes of white,
Flings wide day's portal for the sunlit noon;
And deep the purple stillness of the night
Clings round the narrow moon.

And fair with blooms, and buds that tell of these,
Through merry songs across the valleys blown,
Fresh from the sweetness of south-lying seas,
Comes April to her own.

—*Century.*

SEASONABLE HINTS.

Arrangement of Flower-beds.—In making plans for the planting and arrangement of prospective flower-beds, it is well to bear in mind that too much sameness and uniformity in design, as well as in the material employed, becomes monotonous and tedious. No matter how pretty and becoming a certain dress may be, no one would like to wear it all the time, even at the risk of changing it for one less handsome and comely. "Variety is the spice of life" in flower-beds as well as in many other things.

In *Small Places*, especially, it becomes desirable to produce as much diversity in colors, forms, and character of plants as possible. Each bed should have a certain individuality of its own, which is easily imparted by using only one kind of plants in each bed, or by making one color predominant. This will not only make the grounds appear much larger, but it produces a pleasing and refreshing effect, not obtainable when the same kinds of plants and colors are used in all beds alike, and are planted in the same beds year after year.

HARDY PERENNIALS FROM SEED.

The following list includes good, common, ornamental perennials, easily raised from seeds; indeed, I have raised them all, over and over again. But it does not at all exhaust the list of plants that may readily be increased in this way. All those plants have not good general English names; hence I have used the botanical ones, but on referring to the catalogues of prominent seedsmen you will find most of them included described.

Alyssum saxatile, close matted growth, blooms second year, bright yellow flowers in spring. Raise a few every year.

Anemone coronaria sown in spring will bear a few blooms in late summer and fall, and a full crop next spring. Mulch in winter.

Aquilegia (Columbine) *glandulosa, Olympica, chrysantha, Sibirica*, and *truncata*, are very fine, and choicer than any of their hybrid progeny.

Armeria (Thrift), all shades of pink. Blooms in spring and early summer. Neat bunch habit. Good for edgings. Likes moist, open, sunny places.

Aubrietia. A matted rock-plant, does finely in border. Flowers purple, in early spring. Do not cover in winter.

Bellis (Double Daisies) come readily from seed. Grow in a moist, sheltered, and faintly shaded place. Cover with some dry leaves, and an old box in winter.

Callirhoë involucrata. Bright crimson flowers, all summer. Of straggling, spreading habit from a big Turnip-like root.

Campanula (Bell flowers). The Carpathian, blue and white; the Peach-leaved, blue and white; also, *alliariæfolia, celtidifolia, glomerata, macrantha, punctata*, and *turbinata* are good, easy-to-grow sorts.

Coronilla varia. Lilac-purple, very profuse; all summer. Spreads considerably by underground shoots. Will grow anywhere.

Delphinium (Larkspur). Lemoin's garden hybrids, all shades of blue, are unsurpassed. Summer, and the second growth in fall. The scarlet ones, as *nudicaule* and *cardinale*, thrive well in cold frames, and occasionally in light, sandy, sunny places in the garden, but as common garden plants they are uncertain.

Dianthus (Pinks). We have sweet, garden, grass, fringed, and other Pinks, single and double. Carnations are barely hardy.

Dracocephalum Ruyschianum Japonicum. Large, showy, violet-blue.

Echinacea purpurea. Three to four feet high, showy rose-purple cone flowers in summer and fall. Anywhere, but preferably in moist ground.

Gaillardia aristata. Yellow and brown, copious, all summer, useful for cutting. As a hardy perennial, the best of the genus.

Gypsophila paniculata. A profusion of whitish airy flowers well fitted for bouquet work.

Helenium Hoopesi. Two feet; large, yellow flowers, in summer. Anywhere.

Iberis (Evergreen Candytuft), *sempervirens* and *correæfolia.* White flowers in spring and early summer. Neat, bushy; fitted for edgings. *Gibraltarica, Tenoriana*, and others are not hardy here, but treated as annuals they bloom nicely.

Jasione perennis. Pretty, copious, neat, blue-flowered plant, seldom met with, but very easily raised from seed. Although a bell-wort, its flowers resemble a Scabies.

Lathyrus latifolius. Rose-purple and white everlasting Peas. Should be in every garden.

Liatris (Blazing Star). Handsome native flowers. Grow readily from seed, and bloom the second year.

Lindelofia spectabilis. Blue, in summer. A vigorous but neat border plant.

Linum. The perennial Flaxes, blue, white, and yellow; are very pretty in the forenoon. As cut flowers they are useless.

Lobelia. Our native Cardinal Flower is the prettiest of all, and no country garden should be without it and a good form of the blue Lobelia (*syphilitica*). Seeds sown outside in fall germinate in spring; if sown out-of-doors in spring they are not likely to grow, but if in boxes or pots inside all should be well. *L. splendens* and its varieties are not hardy.

Lychnis Chalcedonica, Haageana, fulgens, Sieboldii, and *Senno*, and their varieties and hybrids, are showy and hardy, and most of them bloom well the first year.

Œnothera fruticosa and *Missouriensis*, yellow; the last has very large, brilliant flowers.

Papaver pilosum and Oriental Poppies. They make a gay show in early summer, but are soon past.

Pentstemon Digitalis, ovatus, barbatus, and often *grandiflorus*; but the other handsome species, as *Murryanus, Cobœa*, and *secundiflorus* have not been hardy with me. *P. Hartwegi*, the one that gives us so many fine garden varieties, is not hardy either, but if sown early it blooms freely in the fall.

Phyterima Charmeli. Pretty violet-blue flower-heads. Anywhere.

Platycodon grandiflorum. Blue and white. Broad-flowered bell-worts; late summer and fall. Showy. Anywhere.

Polemonium cœruleum (Jacob's Ladder). Blue and white. Not showy, but very easily grown. *P. septans*, a small spring blooming sort, is pretty.

Potentilla. Double garden varieties give a good show.

Primula capitata, violet; *cortusoides*, purple; *Sieboldii*, various, fine; and the ordinary Cowslips, Polyanthuses, and Primroses of gardens. Like a cool, moist place; sheltered and somewhat shaded in summer, and a thin mulching in winter.

Pyrethrum roseum, single and double. Pretty garden plants; bloom the first year.

Prunella grandiflora, bluish and white; and *Pyrenaica*, purple. Neat, free-blooming. Open or shady place.

Rudbeckia Californica, laciniata, speciosa. Strong-growing, showy, yellow flowers.

Salvia pratensis, purple, blue, or white; free-blooming. Some other fine sorts, as *farinacea* and *Pitcheri*, said to be hardy, are *not* hardy here.

Statice latifolia, the best of the hardy ones. Late summer and fall.

Veronica (Speedwell). All, as *gentianoides spicata, taurica, rupestris*, and *amethystina.* Beautiful, neat, free-blooming, mostly blue. Like rich, moist ground.

Viola. V. cornuta, blue or white, and Pansies. Shade from strong sunshine in summer, and shelter from winds in winter.

Yucca filamentosa. Very easily raised. Showy white summer flowers. Anywhere not shaded or wet.

WM. FALCONER.

[This list is not compiled from catalogues, but embodies the writer's extensive experience as superintendent of the Cambridge Botanic Gardens.—ED.]

PÆONIES.

In order to treat of the cultivation of the Pæonies as fully and concisely as their importance demands, it is necessary to divide them into two classes, viz.: the Tree Pæonies, *Pæonia Moutan* and its varieties, and the more common herbaceous Pæonies.

Leaving it for the reader to decide for himself whether to cultivate his collection in groups on the lawn, on the margins of shrubberies, or in the mixed flower border, as may be most suitable for his purpose, I would remind him that although the Pæony is perfectly hardy, it will not succeed where water stands on the surface of the ground, or near its roots during the winter season, and that in order to secure satisfactory results it is necessary to properly prepare the ground before planting. The Pæony prefers a moderately enriched, deep loamy soil, or one that is prepared by digging or trenching the ground to the depth of two feet or more, and at the same time working in a good supply of well decayed stable manure. All the preparatory work should be done in the fall, or as early in the spring as possible, that the ground may become well settled before planting-time. In planting, place the roots from two to four feet apart, according to their size, bearing in mind that the plants increase in size yearly; but it is well to plant thickly at first, so as to secure a satisfactory display, and as they increase in size and become crowded, every other plant may be removed.

TREE PÆONIES.

Pæonia Moutan, the parent species of all our Tree Pæonies, is a native of China. All its varieties are dwarf, flowering shrubs, growing from three to five feet in height in about as many years. When planted in groups with other Pæonies, these should occupy the center. They are perfectly hardy, but do best if given a slight protection of evergreen branches during the winter season. A good dressing of well-decayed manure, given every fall and dug in in the spring, is much appreciated by them. The plants when young are of slow growth, and are rather difficult and slow of propagation, and on this account they cannot be obtained at a cheap rate, good strong plants being worth from one and a half to three dollars each, according to variety. The best six varieties are *alba plena*, *arethusa*, *extensa*, *Bunkeri*, *Reine Elizabeth*, and *Kochlerii*.

HERBACEOUS PÆONIES.

These should be given a treatment similar to that advised for the Tree Pæonies, with the exception of protection during the winter; this they do not require, but they are greatly benefited by a good dressing of well rotted manure applied in the fall. These plants are truly the flower for the millions, and the ease with which they can be propagated causes them to be offered at such moderate prices that they are placed within the reach of all. They are generally classed into three divisions, viz.: *officinalis*, *paradoxa*, and *Sinensis*.

DOUBLE-FLOWERED HERBACEOUS PÆONIA.

P. officinalis and its varieties flower from the middle to the end of May. The most desirable varieties are *maxima*, *rosea*, and *rubra*.

The beautiful *P. tenuifolia* and its double form are generally included in this division; these are to many the gems of the genus,

PÆONIA TENUIFOLIA FL. PL.

having rich, fern-like foliage and bright scarlet-crimson flowers.

The second division embraces but few varieties; *P. paradoxa*, *amaranthescens sphærica*, with very double dark crimson flowers, and *pulcherrima plena*, with dark crimson flowers of a purplish shade, are the most desirable for amateurs.

In the third, or Chinese (*P. Sinensis*) division, we have a large number of varieties to select from. The most desirable are *edulis* or *fragrans*, *festiva*, *fulgida*, *globosa*, *Humei*, *Lothair*, *Oberon*, *purpurea*, *superba violacea*, *Whittleji*, and *carnea superba*.

The herbaceous Pæonies are propagated by carefully dividing the roots; which operation is best performed in the spring, about the early part of April.

The Tree Pæonies are propagated by grafting on the roots of *P. Sinensis* and its varieties. This is done by taking some strong single roots early in the spring, and planting them in good rich soil. Keep them growing until September; then cut a cion about three or four inches in length, sharpen it, and insert it firmly in the root; then cover with the earth that has been thrown out in order to insert the graft, and if the work has been properly done, the graft will take care of itself, and make a vigorous growth the ensuing spring.

CHAS. E. PARNELL.

SOIL FOR FLOWER BEDS.

The soil best adapted for flowering plants, generally, is a light, friable loam, containing a moderate amount of vegetable matter, and sufficient sand to render it porous; but as it rarely happens that the amateur has much choice of soil, it is fortunate that most plants will accommodate themselves to any but such as is of an extremely dry, sandy, or calcareous nature, or of a stiff, heavy, retentive character. In the former the plants are sure to be starved, and in the latter, if they ever fairly take root, there is generally an undue development of foliage at the expense of the flowers. In soils of this description much may be done by thoroughly breaking up the superficial crust, or as it is technically termed, "trenching" it at least one spade deep, digging in sharp sand or road scrapings; and if the operation be performed in autumn so that the loosened soil is thoroughly exposed during the winter to the disintegrating influences of frost and other atmospheric agencies, the advantage will be greatly increased.

In soil of an opposite character, *i. e.*, sandy or calcareous, the remedy will obviously consist in the addition of loam in conjunction with decayed leaves or old rotten manure; or where expense is no object, the surface may be entirely removed to a depth of eight or ten inches, and its place supplied with the best loamy compost at hand. Strong, crude manure of an animal nature should be avoided in flower beds.

FLOS.

The Window Garden
AND GREENHOUSE.

RAISING FERNS FROM SEED.

Of the many operations pertaining to gardening, none are more absorbingly interesting than the propagating and raising of Ferns from spores or seeds, which most kinds bear abundantly. In ferneries where the conditions are favorable, the spores find suitable resting-places, on which they germinate fully. Indeed, the seedlings may be seen in vast quantities on damp bricks, on the sides of pots, on the surface of the soil, and in all sorts of positions. Although, however, Ferns come up in this promiscuous fashion, few think of sowing and raising them from spores; what young ones they get are by chance, but if any one will follow out the directions here given they may rear as many as they please, and that without much trouble

The most important point toward the successful raising of Ferns is the preparation of the pots, which should be three parts filled with find potsherds, or soft red brick; then add the soil and press it down and make it perfectly level and smooth on the surface. Before doing this, however, it is always advisable to subject the soil, which should be a mixture of peat and fibry loam, to a good baking on a fine or other hot place, so as to destroy any eggs of slugs or weed seeds, in order that there may be nothing to interfere with the young Ferns when they come up.

In sowing the spores, take the frond they are on, after it has lain between paper for a few days, and sweep off the seed lightly with a brush in such a way that it may fall regularly over the soil. When this is done, the pot should be covered with a pane of glass and at once placed in shallow pans of water, and then set in a shady position in any house in which the temperature is kept between 60° and 80°; but this degree of heat is only necessary for the stove kinds; the greenhouse and hardy varieties germinate freely in any cold-frame, and may even be raised successfully in the window of a dwelling-house or behind a wall in the open air.

The first thing to be seen in the germination of Ferns is a filmy green scale, or prothallus; numbers of these soon spread themselves out over the surface of the soil, which they quickly cover, and after a short time tiny leaves or fronds may be discovered emerging from the center of the scales; and these fronds go on multiplying and increasing in size till perfect plants are formed. Up to this stage it will be necessary to keep the glasses close on the pots, as confined air and moisture are life to the young seedlings; but should they show signs of damping, then the glasses must be slightly tilted for an hour or two each day and let down again.

As soon as the minute plants can be fairly distinguished and are large enough to handle, they should be pinched off. The readiest way of doing so is to make a pair of tweezers, by bending a thin piece of tough green wood, and use them for taking hold of the young Ferns, when, with a pointed stick in the other hand, they may be dibbled in quickly without bruising or injuring them in any way. For pricking the seedlings in, fine peat and loam, mixed with a little sand, is the best soil, and in this they should be made firm by watering gently, through the rose of a pot. As soon as that is done, it will be necessary to protect them again by covering them with panes of glass, unless the pots can be set under hand-lights or in propagating-boxes, where there is plenty of moisture to give the plant a good start. Wherever placed, it should be borne in mind that no sun must get at them, as it would dry and scorch them all up. To prevent this, a thin shade should be kept over them during the greater part of the day, and morning and evening the plants should be bedewed with a syringe. This will start them quickly into growth, and assist greatly in making them strong enough for potting off singly.

As soon as they are ready for this, coarser soil may be employed, and to insure the porosity of this,—an important matter in Fern cultivation,—it is a good plan to mix in with it some charcoal in small pieces or finely broken crocks, soft bricks or cinders, round any of which the roots will cling.

S. D., in London Garden.

NEPHROLEPIS DUFFII.

A very distinct and remarkable Fern, of a close-tufted habit of growth, producing numerous fronds of a very peculiar character, and exceedingly ornamental. They attain a height of about 2 feet, with a bare stem of 6

NEPHROLEPIS DUFFII.

to 8 inches, above which is a narrow linear frond about half an inch wide dividing into a multified apex. The fronds have a drooping habit, with small rounded pinnæ, which have the peculiarity of growing two together from the same point, and are crenate on the edge. It requires high temperature for its best development.

AUCUBA JAPONICA.

Every one knows that beautiful evergreen shrub, and nevertheless it is not as largely cultivated as it deserves. There is no shrub as easily cultivated. It grows well in all soils, although it prefers a light one. The only care it requires is to be placed in a shaded situation, quite under the branches of trees, and kept moist, like all Japanese plants. There it will grow constantly, and resist very cold winters. In my garden several of them resisted the severest winters, when a great many old trees were killed—Quinces, Pears, Cherries, and Evergreens.

It is well known that the Aucuba is diœcious, and that before 1863 we only possessed the pistillate, and therefore never had seen the seed-pods. But since the staminate plant was introduced from Japan by Von Siebold, all the female plants bear fruit, which is exceedingly ornamental.

This shrub is also very interesting as a pot plant; of course, principally the pistillate. There are a great many varieties. I have obtained some by artificial cross fecundation, some with small and large leaves, some plain green, and some variegated and spotted yellow. If a dozen female plants are potted and put in a greenhouse with one male only, they will all be fertilized and covered with seed-pods in December, which will become reddish about February, and remain on the plants until the end of March. In that state they are exceedingly ornamental for in-door decoration, at a time when flowers are scarce, and by their fine glossy leaves they show to good advantage with other plants.

Their propagation is very easy, cuttings put in water strike roots rapidly, and this is the best mode to multiply them, although they may also be raised from seed.

JEAN SISLEY, *France.*

ROSES FOR WINDOWS.

Roses require a season of rest some time; they cannot be forced continuously the year around. If we secure a good growth early in the season, the plants will have ample time to ripen their wood before freezing weather sets in. Should they take a rest during early summer and form their growth only in late autumn, the show of bloom will in consequence be meager.

There are two systems in use; one is to pot the plants into five or six inch size, using light turfy rich soil, with good drainage, and then sink the pot up to the rim in the ground. Cover the surface of the soil with a light mulch to prevent evaporation, and water frequently. An occasional dose of weak liquid manure, and soapsuds from the kitchen, will stimulate the growth. They may remain in the open air till the ground freezes; then prune back the strongest shoots and remove in-doors.

The other system is that of planting the Roses in the open ground early in summer, allowing them to remain there until late autumn; then carefully lift and pot. In this case the plants necessarily receive a check which may or may not injure them for forcing purposes, depending altogether upon the care bestowed. For the novice, the former plan would, perhaps, prove preferable. People who love flowers generally succeed with them, because they are always on the alert to water at the right time, to keep off all injurious insects, and to give a breath of fresh air on suitable days.—JOSIAH HOOPES *in N. Y. Tribune.*

STIGMAPHYLLON CILIATUM.

This plant, a native of Brazil, should be seen oftener in greenhouses than it is. It is of a climbing habit, the leaves, the edges of which are fringed with hairs, are of a glaucous hue. The flowers are produced in umbels of a rich yellow color, and continue in bloom the entire summer. The proper soil is a mixture of loam and leaf mold. Care should be taken to have the shoots properly trained as they are liable to get entangled to the detriment of the flowers.

THREE GOOD BEGONIAS FOR THE WINDOW GARDEN.

I have given up trying to grow Begonia Rex in the window garden. It would live there for an indefinite length of time,—in fact, I never had one die,—but it lives at such a "poor dying rate" that I get discouraged. It usually manages to have on it one tolerably fair leaf and a little mouse-ear, fuzzy tuft that may become another leaf sometime, if nothing happens to it. But one swallow doesn't make a summer, they say, and one leaf doesn't make an attractive plant out of even a Rex Begonia.

But I have three Begonias in my collection which afford me complete satisfaction. Not three of the rarest varieties, by any means, but three *good* ones; and if a plant *is* good, it makes but very little difference whether it is a new or an old kind. These three are *rubra, picta,* and *Weltoniensis.*

B. rubra is certainly the most satisfactory one I have ever grown. My plant was a small one last spring, but it has flourished wonderfully since I obtained it. I potted it in a soil composed of turfy loam and some earth from a corner of the barn-yard fence, where the rains usually left a puddle of water standing, and the richness of the manure pile had soaked into it until it had absorbed the best elements of the heap. To these was added some sharp sand—enough to make the compost crumbly when taken up in the hand and squeezed together. Along in June, it sent up a new shoot from the roots, and it did not stop going up until it had reached a height of three feet and a half. Then it began to send out branches from each leaf, and these branches were covered with large, healthy, dark-green leaves. So heavy is the mass of foliage on the plant that I have had to put three stout sticks in the pot to support it. The plant almost fills an ordinary window, and it would be sure to attract a great deal of attention if it had no flowers. Add to the beauty of the leaves and its extremely graceful habit of growth, the large clusters of bright crimson-scarlet flowers which are produced so plentifully, in charming contrast with the foliage, and it is hard to find a more showy or desirable plant.

B. picta is not so robust a grower, but it grows well, and gives a compact mass of pale-green foliage, spotted with silvery white. Its flowers are a pale pink or flesh color. The under side of the leaves is red, shading off toward the edges into olive. It makes a very handsome plant.

B. Weltoniensis is a general favorite, as it deserves to be. It sends up so many stalks, all covered with shining, rich green foliage of such graceful shape, veined with crimson, that a pot of it soon becomes a most attractive feature in any collection. It is not uncommon to see plants two feet and a half across, and about that in height,—a mass of luxuriant growth,—and the greater part of the winter will see it sprinkled over thickly with rosy flowers. I have never failed in raising fine plants of this variety. No insect troubles it. It stands the close air of rooms well, and does not care for very much sunshine. I tied small weights on the lower branches of the plant I have now, and they drooped in consequence, completely hiding the pot. The plant is a rounded mass of crimson stalks, well covered with foliage.

In spring I cut the tops off, and let the roots rest for six weeks, by keeping them pretty dry. Then I repot and give more water, and soon the plant starts into growth again. Though not as showy as a Geranium, I would prefer it to any. EBEN E. REXFORD.

BEGONIA RUBRA.

BRACKET GARDENING.

Portable plant-stands, placed in windows, says a correspondent of the *Springfield Republican,* were formerly the only receptacles for house-plants, and as they effectually barricaded them, they were not always admissible; but now there are various fixtures for plants which take up no space in the apartments, and yet are so arranged that the plants can be brought close to the glass.

Bronzed and gilded brackets, with stands for one, two, or even six flower-pots, can be attached to any window casement, and, as they can be drawn close to the windows during the day and turned back against the wall at night, they protect them effectually from the chilly night air. Three or four of these brackets can be fastened to each side of the casement, and a large number of plants can be cultivated upon them. As the plants are easily reached, they can be turned frequently and not be allowed to grow one-sided, as is the case in plant-stands. Every withering leaf can also be plucked off, and water can be more quickly given.

I have ten brackets attached to my parlor windows, and upon them twenty-five plants are placed, and most of them are in full flower. Begonias, Fuchsias, Geraniums, Primroses, a night-blooming Jessamine, *Cestrum nocturnum,* and Oxalis are all growing luxuriantly, and my bracket-gardening has proved a great success, and adorns my windows more gracefully than the richest draperies of lace or Persian manufactures could do, while the sunlight is not excluded from the apartment by the delicate traceries of the foliage of the plants.

PROPAGATING VERBENAS.

For the past two years I have practiced, with perfect success, a method of propagating Verbenas which is so easy, and at the same time so certain, that I give it here for the benefit of the readers of THE AMERICAN GARDEN.

At the close of the bedding season I select the best Verbenas for color, etc., and drag up a handful of the runners. These are placed in a shallow box—say three inches deep—and over them is thrown a shovelful or so of road sand. They are watered and put in the shady side of a cold pit. From November till March first they wont grow three inches; but if they happen to have too rich sand on them, shear them down to the level of the box, if they peep over it. In March go over them carefully, pinch every terminal eye, cover an inch or two with swamp moss mixed with about one-twentieth part of its bulk of fine bone dust, and expose to full sun. The quantity of young shoots that will put out is past belief. A cutting bench must be large, if a few boxes treated as above wont fill it in a week or two. For amateurs, with always more "stuff" requiring shelter than room, the above may be useful. WM. M. BOWRON.

ABOUT CALLAS.

Every one knows that the Calla requires rich soil and frequent watering, but very few amateurs give enough heed to this so as to have the earth sufficiently rich or the water supply sufficiently abundant. Nothing but the most severe perseverance in having the earth as much as half manure will insure success; then the plants when growing vigorously must not only be kept as wet as possible, but they delight in warm, and even moderately hot water. As ordinary saucers are shallow, we have placed a pot of Calla in a large earthen wash-basin, which we keep filled with warm water. It is also requisite to cut off each flower as soon as it shows any sign of withering; the result will be that a new bud will very soon make its appearance, often before the old stem is wilted.

S. H. H.

Lawn and Landscape.

A LANDSCAPE PICTURE.

THE CATSKILLS.

Dr. William Adams, in his beautiful home on Orange Mountain, had a pleasant way of inviting his visitors to take a look at a wonderful picture which he had, by the greatest of artists. Then he would throw aside the curtains of his large front window, which he had framed after the manner of a painting, and reveal to them the extensive, diversified, picturesque, and inspiring scene.

I, too, am so happy as to possess one of the first works of that same incomparable artist, "who alone hath immortality," says the venerable Dr. F. N. Zabriskie, in the *Christian Intelligencer*. It is the view, not from, but of, a mountain, or rather of that long and lovely mountain range known as the Catskills. . . .

Immediately in front of my window are two tall and vigorous Maples, through whose leafy curtains I have to keep cutting tunnels of sight. They act in summer as fronded frames and as concentrating mirrors for my pictures. In the autumn they are gilded and crimsoned and purpled as Titian himself could not have done them, had he turned frame-maker. In the winter their springing and pointed arches and interlacing boughs, especially when outlined against the sunset, give my mountains the setting of a Gothic window.

Thence the eye wanders down through garden and orchard and grain-fields, and across the broad idyllic meadows that everywhere border the winding Rolokoke Creek, till it comes to Beecraft Mountain—which is a frog, but knows enough not to inflate itself into rivalry with the mighty Catskills. So it quietly lies down at their feet like a faithful hound, and disposes itself as gracefully as possible at full length before them, as the rugged step of a throne.

Beecraft Mountain, albeit bare and rocky in places, especially on the summit, and resounding ever and anon with the blast-thunders of its stone quarries, is largely overspread with a covering of forest and farm, which in summer and autumn outshines the Persian carpets or the Turkish rugs of the "gorgeous East." And at all seasons they hold up against the background their long green line of Pine and Cedar and Spruce and Hemlock points, which perform so indescribable a purpose both of ornamentation and illusion in a landscape. And back of all this rise my beautiful, billowy, sublime, and kingly Catskills!

RAISING TREE SEEDLINGS.

All tree seeds which require careful nursing, shading, or other special treatment, or which are adapted to being grown very closely together at the start, should be sown in a well prepared seed-bed. Only a small piece of ground is needed for this purpose, and a portion of it should be covered with open lattice-work, or in some other way prepared so as to partially exclude the sun's rays, and also admit the rain, to be devoted to those small seedlings which need shade the first season from transplanting.

After the bed has been made smooth and level, take a small marker with teeth set six inches apart, and open the rows by drawing it across the bed. Sow the seed thickly in the rows; then, by placing the marker so that the teeth will pass half way between the rows, and drawing it across the bed, the seed will be nicely covered.

Tree seeds, as a rule, should be covered very lightly—just sufficient to hide them from view. This will apply to all small seeds and most large ones. If the ground seems to be too dry at the surface, better take pains to keep it moist with a sprinkler than to bury the seeds so deep that they can never reach the light. The distance to which a shoot can push upward through the soil before its vitality is exhausted varies, usually, according to the size of the seeds; but in all cases it is very limited, excepting the Walnuts, Oaks, and a few other kinds, which grow strong tap-roots.

The time for sowing most varieties is late fall or early spring—either, according to convenience. Those seeds which are liable to be injured by drying can be kept fresh through the winter by mixing them with sand and placing them in the cellar, or they can be boxed up and buried in the ground. Some varieties, not affected by frost, can be left on the surface of the ground, and covered with a litter of leaves or straw.

All the seeds of coniferous varieties are greatly benefited by soaking in warm water for four or five days previous to sowing, changing the water daily to prevent souring or fermentation. After having been soaked, as above recommended, to facilitate sowing, they may be rubbed in dry sand to remove the surface moisture, and the sand sifted out with a fine sieve. The seed-bed should be gone over several times during the summer, and all weeds and grass carefully removed.

Many varieties of tree seeds do not germinate until the second season from sowing. In such cases, small stakes should be stuck at intervals along the rows, so that their location may be known at time of weeding, and care taken not to displace the dormant seed. All varieties planted in the seed-bed which do not attain a growth of say five inches the first season, should be allowed to remain there until after the next season's growth. This will include about all of the evergreen varieties, and some of the others. Those which exceed five inches should be transplanted into the seedling nursery after the first year's growth, and all the others after two years' growth.—*Forest Leaves.*

Foreign Gardening.

ASPARAGUS CULTURE IN FRANCE.

Perhaps in no other locality is the culture of Asparagus carried to so great a degree of perfection as in the suburbs of Paris. In certain localities in the neighborhood of this great city, Asparagus growing, both for the young shoots and for the plants, is a very prominent industry. The methods of culture adopted there are, in some respects, quite different from ours. While in our land of high-priced labor it would be unprofitable to expend the amount of care upon our vegetables that the English and French gardeners do, a study of their painstaking methods sometimes offers suggestions by which we can profit.

The French are not in the habit of trenching the soil for their Asparagus beds. They say it is entirely unnecessary. The roots of the plant, they claim, have little inclination to run deeply, so long as the surface soil is well cultivated, and contains all the nutriment the plants can use. They agree, however, that Asparagus requires very high manuring, and they use for this purpose the most concentrated natural manures they can obtain.

In starting a bed, seedling plants one year old are always used when they can be obtained. These are considered superior to older plants. Great care is taken, however, that the plants receive no check to their development, either through lack of nourishment or moisture. After having their bed thoroughly prepared, the Paris gardeners dig a shallow trench, about a foot wide and six or seven inches deep, for each row of plants. The rows are usually placed about four feet apart, and the plants set one to two feet apart in the row. They raise little mounds about two inches high, upon each of which a plant is placed, and the roots carefully spread out over this, so that they extend in all directions. They then draw in soil enough, so that the crown of the young plant is covered about an inch deep. The ground is always kept well cultivated, and each autumn a liberal dressing of manure is given. The soil that is washed into the trench is carefully removed before winter, so as to leave the roots no deeper covered than they were in the spring.

Every spring, the bed is forked over, always taking care not to injure the roots. The third spring after the plants are set, it is allowable to gather two shoots from the more vigorous plants; though it is considered best to defer the cutting until the fourth year.

French gardeners are quite whimsical, too, about the manner of gathering their Asparagus. They say that the neat Asparagus knives advertised in the catalogues are intended for delicate people who are afraid of soiling their fingers; and the only proper way is to pick the shoots by hand. They consider it quite important to break them off at the point where they are united to the root, rather than in the ground above this point, as we usually do. They remove a little earth about the shoot with the hand, then work the fore and middle fingers into the soil near to the point of attachment, when a slight pressure of the finger under the base of the shoot causes the latter to snap off clean at the root.

They consider a shoot of proper size to pick when the head is an inch above the soil. White Asparagus is considered more delicate in flavor by the Parisians than that which is permitted to take on the green color. The former brings much the higher price in the markets. Salt is not used to any considerable extent as a fertilizer for Asparagus by the growers about Paris.

Although the market gardener cannot afford to practice all the minutiæ described, in the family garden, it should be our aim to secure the best and the earliest of vegetables; and if by adopting the methods of others we may improve the quality and earliness of the products of our own garden, we can afford to take a little extra pains.

"ELM."

Horticultural Societies.

NEW-YORK HORTICULTURAL SOCIETY.

The leading feature of the March exhibition of this society was the grand display of Narcissus made by Weelsen & Co., Passaic, N. J. It was undoubtedly the finest collection of the kind ever exhibited in America, filling an entire table of the whole length of the hall, and comprising one hundred and sixteen different species and varieties. The great improvements which have been made in this class of bulbous plants within the last few years, can hardly be imagined without having seen such a collection. These plants were of course grown in pots, and had been slightly forced; yet most of the varieties are of easy culture, and are perfectly hardy in this latitude.

Roses, as usual, attracted the most marked attention. All the popular and many rare varieties were represented, and most of them in exquisite specimens and large quantities, so that it would have been no easy task to single out the best.

Orchids from several exhibiters made a magnificent display, and some specimens of *Phalænopsis Schilleriana* excelled in gorgeous beauty even those shown at previous meetings.

There were several meritorious collections of cut flowers on the tables, and it is gratifying to note that the intrinsic value of these exhibits is perceptibly improving.

Carnations, Primulas, Hyacinths, Tulips, Lilies of the Valley, and many other plants, which we have not space to enumerate, completed this interesting exhibition.

MASSACHUSETTS HORTICULTURAL SOCIETY.

Storm and sleet are in keeping with the 20th of March, but the Rose and Azalea show, which takes the edge off the rude season for flower-lovers, opened bravely as usual. There is something substantial in the habits of a society which owns its granite building and holds $200,000 of property, besides a library whose very titles are enviable to a student of horticulture. The exhibition is not limited to Roses and Azaleas, which were rivaled in attraction by inviting groups of spring flowers.

The show of Azaleas from the Hoveys of Cambridge was arranged with peculiar taste, —the rosy, pale, and crimson clouds of blossoms rising in ranks against a large window, coloring the light-like stained glass, while among them rose pots of tall Bermuda Lilies in bloom, with best effect. Azaleas always should be shown against the light, which heightens their transparent coloring. The unique specimen labeled Mme. Leonie Van Houtte, sported red, flesh, rose, and striped white blossoms on one plant. Mr. McLaren, the large grower from Forest Hills, showed Tree Azaleas in finest bloom, trained in most scientific fashion, stems bare and straight as walking-sticks, with a tuft of large, pure blossoms at the top. The society exhibition would not be complete without ex-President Wilder's collection of Azaleas, notable for forty years, the latest seedling, labeled by the veteran's own hand, being a pure white, single flower with oval petal, almost as regular as a Camellia. His M. Verschaffelt is one of the finest showy Azaleas, like a Lady Washington Geranium, rose-white with carmine stippled center. Baron de Vriere, full ruffled white with spare tinges of rose; Marquis of Lorne and M. A. Hardy, deep salmon reds; Rosy Morn and Decora, deeper crimson, may be mentioned as Azaleas which group well together, a point lost sight of, or not at all considered in Azalea houses, but which concerns the fullest appreciation of their beauty.

The winter past has not been a good one for Roses, and growers deserve all the more credit for results obtained. W. C. Strong, of Brighton, showed a dozen Baroness Rothschild in fine bloom, grafted January 20th. J. B. Moore & Sons, Concord, had among other plants the Marquise Castellani, one of the finest pink Roses in color known, and a Mabel Morrison, which they grow to perfection, also H. P. Roses, not generally grown; the Duchess of Vallombrosa, finer pink than Baroness Rothschild, making a fine group with the pale Merveille de Lyon and pearly Jules Finger; Mrs. Harry Turner, a deep scarlet velvet; Camille Bernardin, which shows good substance, spite of the month, which leaves other Roses tender-petaled for want of sun; and last, the new Rose Gabriel Luizet, over which growers are enthusiastic, pronouncing it the form of La France, with better coloring. It certainly has good qualities,—a long, upright stem, pointed buds, finely cupped flower, outer petals recurved, and pure attar scent. It will likely prove a good bouquet Rose, as the Marquise Castellani will be a fine one for the corsage, finished in form, bud, and tint, but not over large.

S. D. P.

COTTON CENTENNIAL EXPOSITION.

The Centennial Anniversary of Cotton Exportation from America will be fitly commemorated by a grand World's Exposition to be held at New Orleans, La., commencing on the first Monday in December, 1884, and closing not later than May 31, 1885.

The Horticultural Department, which has been placed under the superintendence of Mr. Parker Earl, promises to combine the most extensive exhibits in its various branches that have ever been collected on this continent. The horticultural group has been divided into the following classes:

1. Ornamental Trees, Shrubs, and Flowers.
2. Conservatories and their Management.
3. Implements and Accessories.
4. Garden Designing and Construction.
5. Vegetables.
6. Fruit and Fruit-trees.
7. Seeds and Saplings of Forest-trees.
8. Gardens for Dwellings.

For schedules and any information pertaining to the Horticultural Department of the Exposition, address

Mr. Parker Earl, Cobden, Ill.

THE WEST TENNESSEE HORTICULTURAL SOCIETY.

This society will hold an exhibition of Strawberries, vegetables, and flowers, in the city of Jackson, Tenn., on the 8th, 9th, and 10th days of May, 1884. All horticulturists are cordially invited to attend.

Premium list and programme, giving full particulars and much valuable information about the advantages of West Tennessee as a fruit-growing country, can be had by postal-card request to *Jno. T. Stark, Jackson, Tenn.*

Miscellaneous.

FASHIONABLE ROSES.

Dark colors, the darker the better, are now all the rage for corsage flowers in Paris, and a great demand for the new dark Tea Roses has in consequence been created. Buds of *Paul Neyron*, a very large, dark Hybrid Remont Rose, are also much worn.

P. J. A. BERCKMANS.

The *Rural New Yorker* gives in a recent issue a most excellent and life-like portrait of this distinguished horticulturist, which, in artistic execution and likeness, is as superior to the ordinary newspaper portraits as cream is to skim-milk. *Mr. E. S. Carman* is doing praiseworthy service in thus introducing the prominent men of the profession to his readers.

CULTIVATING NETTLES.

Nettle cloth, which before the introduction of cotton fabrics was held in high esteem, stands a fair chance of coming into vogue again. Modern science and machinery are supplying improved methods for its successful manufacture, so that the Nettle is now actually being cultivated in Germany, where its fibre is made into a variety of textile fabrics. A Dresden manufacturer has produced from it the finest thread known to the trade, of which a length of sixty miles weighs only two and a half pounds.

AMERICAN POTATOES IN ENGLAND.

A leading English magazine says, in a recent issue: "The quality of Potatoes raised in England is, on the whole, so superior, and the preference for them is so great that it does not pay to import novelties from abroad." Yet, strange to say, a list of "Choice Potatoes for Profit and Exhibition, consisting of the finest varieties that have been introduced to cultivation," published in the same number, contains:

Pride of America, Snowdrop, White Elephant, American Purple, Beauty of Hebron, Early Gem, Bresee, Late Rose, Queen of the Valley, Trophy, Adirondack, Blush, Matchless, and *Triumph*, all American varieties, and over one-third of the entire list.

NOTICES OF THE PRESS.

THE AMERICAN GARDEN, published in this city, is a faithful guide in all matters relating to work in the garden or on small farms.—*The Continent.*

THE AMERICAN GARDEN, one of our most popular horticultural journals, commenced its fifth volume recently by appearing in an elegant cover, which adds greatly to its former handsome appearance.—*North and South.*

THE AMERICAN GARDEN is always bright, beautiful, and fresh, as if from the land of flowers. The publishers enjoy rare facilities for giving their patrons a valuable journal, and the editor, who is recognized high authority in horticultural matters, spares no pains to keep each number up to its high standard.—*The South.*

THE AMERICAN GARDEN presents a greatly improved appearance in its neat and prettily designed cover. Its contents are of great interest to either the professional gardener or the amateur, and its reading matter is profusely illustrated with designs of fruits, flowers, etc.—*Queens Co. Sentinel.*

OUR BOOK TABLE.

Proceedings of the Portage County, Ohio, Horticultural Society, H. Y. Beebe, president; Andrew Willson, secretary.—The transactions of this vigorous and excellent society are always perused with much interest, and never without finding much valuable and interesting information in them.

The Undine Region of South-western Minnesota. A pamphlet published by the State Board of Immigration, and giving a general description of this region. *H. H. Young, St. Paul, Minn.*, is the secretary of the board, and will give desired information respecting this and other parts of the State.

Godey's Lady's Book is fully justifying the expectations which we anticipated under its new management. Each number appears to be an improvement upon the preceding one. The March number is especially varied and rich in interesting and enjoyable matter. In addition to the usual number of fashion-plates, it contains the touching steel engraving, "Far From Home."

The Hygieau Home Cook-Book; or, Healthful and Palatable Food without Condiments. Fifth edition. Price, paper 25 cents; cloth 50 cents. Fowler & Wells, Publishers, 753 Broadway, New-York. It is not a work on the philosophy of food, but one giving recipes for its healthful and palatable preparation, and it would be hard to find more information condensed in so small a space than is given in this home cook-book.

Kansas.—A pamphlet of sixty pages, containing information concerning its Agriculture, Horticulture, and Live Stock, together with statements relating to vacant lands, schools, churches manufactures, wealth, mineral resources, etc. Prepared by the State Board of Agriculture, and published as a guide to those seeking homes in the West. Copies may be had by addressing the secretary, *Wm. Sims, Topeka, Kansas.*

Living in Florida.—We have received from *Home and Farm* a neat pamphlet containing the letters of its Florida correspondent, Mrs. L. B. Robinson. These letters are valuable because they truthfully describe all the difficulties new settlers in that State must expect to encounter, and they give just the information about everyday life which cannot be obtained from official reports or pamphlets published by land agents. Every one interested in Florida ought to have this pamphlet. Price, twenty-five cents. Address *Home and Farm*, Louisville, Ky.

Bay State Monthly, *Boston.* The initial number of this magazine commences with an excellent portrait and a condensed biography of the *Hon. Marshall P. Wilder*, President of the American Pomological Society. This will be welcomed with delight by his many friends and admirers; for few can be aware of the many important positions he has filled, and the powerful influence he has exerted upon the development of the industries, education, and general progress during the past half century. The publishers are to be congratulated upon choosing the most renowned and most worthy of New England's sons to introduce this publication to the world.

A Primer of Horticulture, for Michigan Fruit Growers. Prepared for the use of beginners in Horticulture, by Secretary *Charles W. Garfield*, Grand Rapids, Mich. A pamphlet of sixty pages. Price, 15 cents. This is a unique and most valuable publication, the conception and execution of which does high credit to its editor. The prime object of the work was to answer the many questions frequently asked by young people who are just starting in rural life, and desire to bring about the comforts that horticulture may afford. To this end Mr. Garfield has induced several of our most experienced horticulturists to write short practical essays on the various kinds of fruits and vegetables, the flower garden, the conservatory, ornamental planting, the value of observation, and other topics. All these are contained in the pamphlet, and a greater amount of solid practical information, it would be difficult to condense into an equal space. The work, although principally intended for residents of Michigan, is of equal value to horticulturists anywhere.

CATALOGUES RECEIVED.

J. Jenkins, *Winona, O.*—Price List of Fruit and Ornamental Trees, Small Fruits, etc. The raising of Tree Seedlings is made a specialty at this establishment.

J. Churchman, *Burlington, N. J.*—Illustrated Circular of the new Raspberry, "Superb," the excellent qualities of which are indorsed by many testimonials from prominent fruit growers.

Geo. S. Josselyn, *Fredonia, N. Y.*—Circular Price List and description of "Fay's Prolific Currant," introduced by this firm, and recognized as the best and most valuable red Currant in cultivation.

William B. Reed, *Chambersburg, Pa.*—Catalogue of New, Rare, and Beautiful Roses, Hardy Shrubs, etc.,—a carefully selected list, with accurate descriptions of all the best and choicest varieties.

John G. Burrow, *Fishkill, N. Y.*—Illustrated Catalogue and Price List of Grape-vines, Small Fruits, etc., with colored plate of the Atlantic Strawberry. New and choice hardy Grapes a specialty.

Green's Nursery Co., *Rochester, N. Y.*—Illustrated Catalogue of Trees, Plants, and Vines; Small Fruits a specialty, with handsome colored plate of the James Vick Strawberry, which has its head-quarters here. The pamphlet is full of sensible and practical advice of great value to every one interested in fruit culture.

Wm. Parry, *Parry P. O., N. J.*—Descriptive Catalogue and Price List of Strawberries, Raspberries, Blackberries, Grapes, Currants, Gooseberries, Fruit and Ornamental Trees, etc., comprising all the best new and old varieties. Colored plates of Kieffer Pear, Atlantic Strawberry, and Hansell Raspberry. The Kieffer Pear and Wilson Jr. Blackberry, are among the leading novelties of the season.

Mapes' Complete Manures.—A pamphlet giving descriptions, analyses, and prices of the various fertilizers manufactured by the *Mapes Formula and Peruvian Guano Company*, 158 *Front Street, New-York.* It contains also valuable information about the use of fertilizers in general, the cultivation of the principal farm and garden crops, and hundreds of reports from prominent farmers throughout the country. It is sent free to all applicants.

E. P. Roe, *Cornwall-on-Hudson, N. Y.*—Catalogue of Small Fruits and Grape-vines. This, as Mr. Roe informs his patrons on the first page, will be the last one to be sent out by him, as the labor and cares of business interfere too much with his literary work, and that he has therefore decided to close up his plant business. For Mr. Roe's personal welfare we are glad of this change, as no one could, without detriment to his health, conduct so extensive a business in addition to the performance of a large amount of literary work. But to the nursery business in general his retirement is a real loss, for no one has done so much to elevate and dignify the culture of small fruits, and bring their refining influences to the notice of country residents, as he.

The stock for sale is large and of best quality, and those intending to plant will find it to their advantage to send for a catalogue.

ANSWERS TO CORRESPONDENTS.

Flowers for the Adirondacks.—*S. H. H., Milton, N. Y.*—Nearly all the annuals marked *hardy* in seed catalogues will succeed in that region. We would by all means try the *Wild Garden* seeds; among so great a variety, there are surely some suited for every latitude and climate.

Plant Protectors.—*T. U. W., Graniteville, S. C.*—There are several kinds of appliances manufactured and sold in seed stores, for the protection of plants against sudden frost and also against insect depredations. With small plants, an inverted flower-pot answers the purpose completely.

Jasmine.—*Mrs. C. B. B., Palmyra, N. Y.*—The common Jasmine succeeds best in a compost of equal parts of peat, loam, and well-decomposed leaf-mold mixed with fine sand. The best time for transplanting is in spring, when the roots as well as the old wood should be pruned back. During summer, when growing, it delights in light temperature and plenty of water, but in winter when at rest, it should have comparatively low and dry atmosphere. Our January number contained an article on Allamandas.

Golden Millet.—*P. B., Charlotte, N. C.*—This is a valuable forage plant, especially where the ordinary meadow grasses do not succeed well. If wanted for soiling purposes, it should be sown at intervals from the earliest period; the ground can be worked till the middle of July. It is generally sown broadcast, at the rate of two to three pecks per acre.

Lucerne thrives best on deep, light soil. For sowing broadcast it requires twenty to twenty-five pounds of seed per acre.

About Wistarias.—*Mrs. F. B., Toronto, Kansas.*—There are several species and varieties, but the Chinese is the one generally grown. Wistarias are somewhat fastidious about their positions. A plant may grow luxuriantly in a certain location, while another, under apparently the same conditions, refuses to grow. Would advise to take the plant up carefully, spade the ground deeply, pulverize finely,—but do *not* add manure,—and set the plant out again, cutting back to a single eye. Mulch the ground in summer.

Insects in Flower-pots.—*S. H. H., Milton, N. Y.*—The minute insects which infest the roots of your pot plants are no doubt the "Ground Aphis," a common pest of house plants, especially when kept in a dry atmosphere. The most effective remedy is a strong decoction of Tobacco stems, about half an ounce to a gallon of water, and boiled until it has the color of strong Coffee. When cold, pour into the pots enough to saturate the entire mass. When plants are very badly affected, it may become necessary to shake out the soil, wash the roots, and repot in proportionately small pots, giving rather sandy soil and good drainage. The tops should be cut back at the same time, and the plants kept in a moist, shady position for a few days.

Extent of the Corset Industry.—The annual sale of Corsets in the United States is about $10,000,000, of which two millions are imported and eight millions are manufactured in this country. The largest manufacturers of the world are WARNER BROTHERS, whose factory is located at Bridgeport, Conn., with salesrooms at New-York and Chicago. The business of this firm has been built up entirely within the past ten years, and is due largely to the discovery by them of a stiffener for corsets, called Coraline, which they use in place of the rigid and brittle whalebone heretofore employed. The cloth which this firm cut into corsets in a single year, if drawn out in a continuous line, would more than reach from Boston to Chicago, while the Coraline which they use in stiffening these corsets would extend over half-way around the earth.

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C. *German Pansies.*—A packet of fifty seeds of these lovely flowers, of which one can never get tired. The seeds here offered are from the best and choicest collection in Germany.

D. *Asters, Choicest Mixed.*—The most desirable and valued varieties of the best German and French strains, are represented in these packets, which are vastly superior to what is generally known as Mixed Asters.

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G. *Pea, Bliss' Ever-bearing.*—A sample packet of this extraordinary new wrinkled Pea, which is now, for the first time, offered to the public. For large yield, excellent quality, and continuancy of bearing, it has no equal.

H. *Cauliflower, Sea-foam.*—One packet. This valuable new variety combines more desirable qualities than any of the older kinds; in size and beauty, and especially in reliability of heading, it excels all others.

I. *Water-melon, American Belle.*—One packet, now first introduced, and of great value for home use as well as for market. It is very large, early, and of delicious quality.

J. *Oats, Black Champion.*—A sample package. These Oats were selected from a number of varieties received from Europe, and are of great promise. Selected heads have averaged one hundred-and sixty-nine grains. The roots tiller more abundantly than those of any other variety, so that half the quantity of seed usually sown per acre is sufficient.

K. *Barley, Imperial.*—A sample packet. All reports about this new variety speak in highest terms of its excellence. In yield and quality alike, it is a valuable acquisition.

L. *Potato, Tremont.*—One tuber. A medium early variety of excellent quality; now offered for the first time.

M. *Potato, Iroquois.*—One tuber. A large, handsome variety of good quality, large yield, and superior keeping quality; new first offered. Both varieties received *First Class Certificates of Merit* by the London Royal Horticultural Society at the recent great International Potato Exhibition.

PLANTS AND BULBS.

N. *Helianthus multiflorus, fl. plen.* Golden Sunflower.—A hardy perennial plant of great beauty, grows about four feet high and bears a profusion of rich golden-yellow flowers of the size of Dahlias.

O. *Polyantha Rose, Mad. Cecile Brunner,* the Fairy Rose. —This is an entirely new class of Roses, of dwarf habit, with bright flowers of exquisite fragrance; hardy and effective.

P. *"Curiosity,"* a new early flowering *Pompon Chrysanthemum,* with brilliant, deep-bright crimson flowers tipped with golden yellow. This choice variety just introduced here is not for sale, but is offered only as a present to our subscribers.

Q. *Clematis coccinea* (Scarlet Clematis).—One of the most desirable climbers for covering verandas, trellises, arbors, screens, etc., as it grows from eight to ten feet in one season. Its coral-red flowers are produced in great profusion.

R. *Eulalia Japonica zebrina.*—A remarkably handsome variegated grass, perfectly hardy, growing to a height of six to seven feet, and producing tall, elegant plumes, highly ornamental for vases.

S. *Lilium Wallacei,* recently introduced from Japan. Flowers four to six inches in diameter, of clear buff-orange color, distinctly spotted with numerous black dots. The bulb is small, but perfectly hardy.

T. *Amaryllis Treatei,* the Fairy Lily.—A delicate, pure-white flower, two to three inches in diameter, borne on slender stems 5 to 6 inches high. Suitable for the garden or house.

U. *Strawberry, the Prince of Berries.*—3 plants. For complete description and life-size illustration of this really superb Strawberry, see AMERICAN GARDEN, August number.

For other Premiums see General Premium List, mailed free on application.

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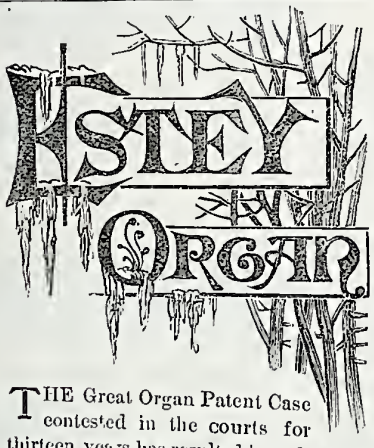

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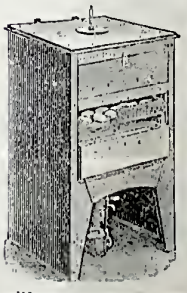

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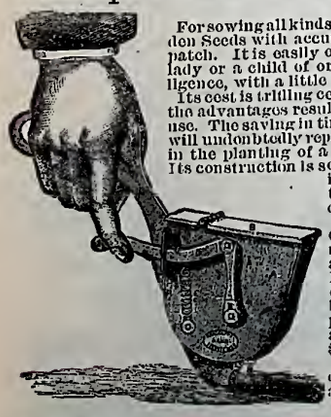

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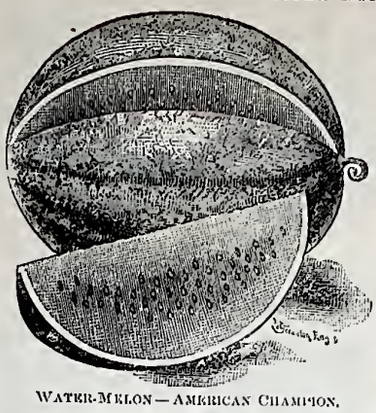

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With this superb new Water-melon we take pleasure in introducing to the public a variety which, we are confident, possesses qualities far superior to any kind hitherto cultivated.

It is a cross between **Rattle-snake** and **Scaly-bark Melons**, both renowned for their excellence. In general character it partakes somewhat of the features of each, but excels in all the most desirable qualities of a first-class Melon for market as well as home use. The skin is dark-green, delicately marbled with lighter shades; shape slightly oval; size large and remarkably uniform, varying from 25 to 50 pounds, although selected specimens reach a much greater weight; the crop holds out well in size up to the last pickings; rind very thin, yet so remarkably firm and tenacious that it bears transportation without breakage and injury; flesh tender, melting, and of unsurpassed quality in every respect, retaining its freshness and sweetness longer after picking than any known kind. The vines are of extraordinary vigor and astonishingly productive.

To test its market value, last summer, some of these Melons were sent to leading Melon dealers in the principal cities in different parts of the country, and although at the time the markets were overstocked with other varieties, these sold readily at from $5.00 to $10.00 per hundred more than current prices. The following are some of the comments of the parties who sold them:

"They created more commotion in the market than was ever known in the Melon trade."

"In shipping quality they surpass all varieties known in the market."

"They carry splendidly; the specks, rots, and breaks are much below the average."

"In keeping quality there is no other kind to approach it."

"Although the market was very dull, these were engaged several days ahead, at advanced prices."

After hearing these indorsements from men who are first authorities in the fruit trade, it will be evident to every one that no other variety combines so many valuable qualities as the **American Champion.**

Price, 25 cents per packet; 5 packets for $1.00.

FIFTY DOLLARS IN PREMIUMS,

To be awarded as follows:—$25.00 to the grower of the largest **American Champion Water-melon**; $15.00 to the grower of the second largest; and $10.00 to the grower of the third largest. All reports, which must be signed by three witnesses and sworn to before a Justice, to be sent us by October 15th, 1884, and on November 1st the cash will be forwarded to those entitled to it. We reserve the right of ordering the prize-winning Melons shipped to us, for exhibition, expenses of transit to be defrayed by us.

BLISS'S AMERICAN WONDER PEA.

The Earliest Dwarf Wrinkled Pea in Cultivation.

Extra early—requires no bushing—exquisite flavor. The best variety for forcing under glass, and the best for early sowing in the garden. This splendid variety is the result of a cross between the *Champion of England* and *Little Gem*, and combines all the good qualities of both of its parents, with the additional ones of superiority in flavor to the Champion and of greater productiveness than the Little Gem. Peas are ready for the table in thirty-three days from date of planting. Thirty to forty pods have been counted on some vines, and nine large peas in some of the pods, and every pod is well filled. The vine grows from eight to ten inches high, according to the soil and season.

After a more extended trial than any previous introduction was ever subjected to, **Bliss's American Wonder Pea** has been pronounced by press and public the most desirable wrinkled variety in cultivation, while, in point of quality, the best horticultural judges in the world maintain that it is surpassed by no other variety.

CAUTION.—Each succeeding season the necessity becomes greater of cautioning the public against spurious American Wonder peas. We have on different occasions secured several packets from dealers who claimed to supply the genuine BLISS'S AMERICAN WONDER PEA, which, upon trial, proved to be entirely unlike it. We are within the mark when we say hundreds of bushels other than the genuine variety have been sold. As there seems to be no protection from such fraud, it is to your interest to procure a supply from head-quarters; for unless you obtain the GENUINE **Bliss's American Wonder,** you will never know why it is that, wherever grown, it has been pronounced by all the earliest, the most productive, and best-flavored variety in cultivation.

Per pkt., 10 cents; pint, 40; quart, 75, by mail, post-paid. When delivered at our store or sent by express at purchaser's expense: pint, 30 cents; quart, 50; peck, $2.50; bushel, $8.00. Prices for larger quantities on application.

Voluntary Testimony in favor of Bliss's American Wonder Pea.

From **Rev. Henry Ward Beecher.**—"Your peas are wonderful, none others so good. I do not mean to plant another year any others, early or late. They beat the Alpha in earliness, and out of sight in flavor."

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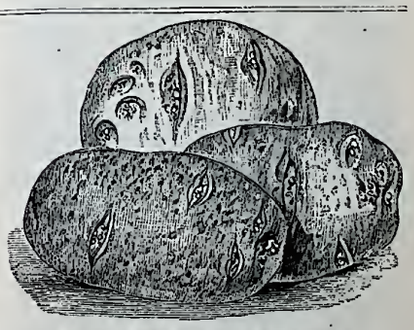
NEW EARLY RHUBARB—"PARAGON."

This variety, although now offered for the first time in this country, has had extensive trial in England, and has more than verified the claims made for it. It is unquestionably one of the finest varieties of Rhubarb ever offered, being the earliest of all and wonderfully prolific. The crowns and stalks are produced in such profusion that more than twice the weight can be gathered from "PARAGON" than from any other sort. It has also the qualification over all others that IT NEVER SEEDS, a claim that we have tested and found well sustained last Summer. The leaves are remarkably small, while in color the stalks are a beautiful bright red, and in flavor unsurpassed. Price, strong plants, 75 cents each; $7.50 per dozen.



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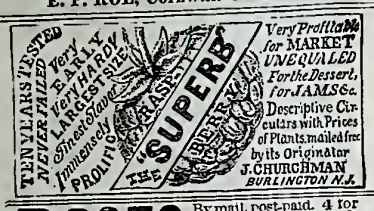

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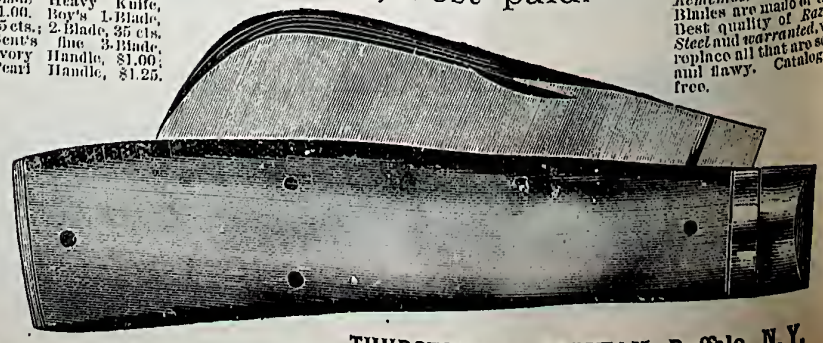

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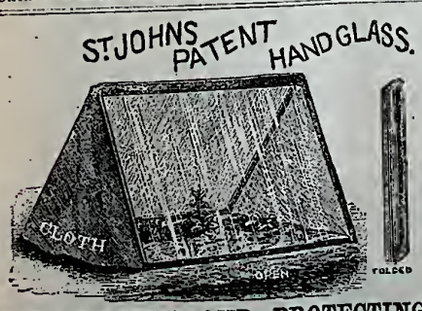

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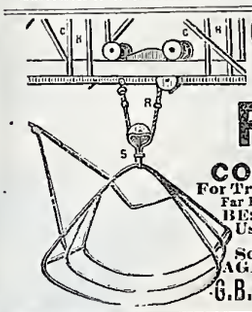

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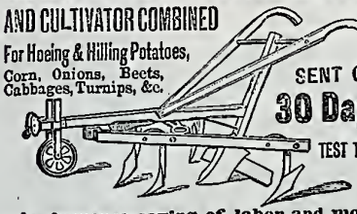

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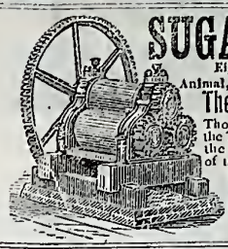

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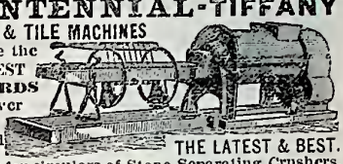

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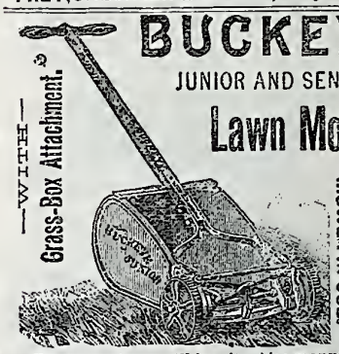

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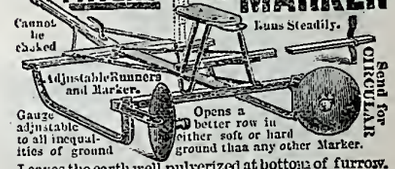

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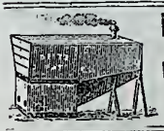

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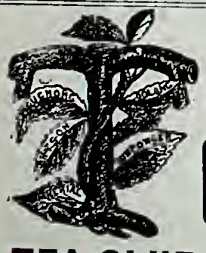

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W. H. TUTHILL, Mattituck, L. I., reports through S. P. TUTHILL:

"I have used the Mapes Manures for five years, and cannot but speak in the highest terms of the results obtained with them. The following are some:

With	400 lbs. per acre for	Oats,	yield	81	bushels per acre.
"	1,400 " "	Potatoes,	"	275	" "
"	1,500 " "	Cauliflower,	"	181	barrels "
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Extract from *Rural New-Yorker*, November 24, 1883:

C. H. Pease, of South Windsor, Conn., has raised this season 496 bushels of onions from one-half acre of ground, at a cost of $100, and his profit is $239."

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400 lbs. Mapes' Onion Manure	$12.50
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Total expense of crops	$101.45
Yielded **502 bushels of onions**, that averaged me 70 cents per bushel, or	**$351.40**
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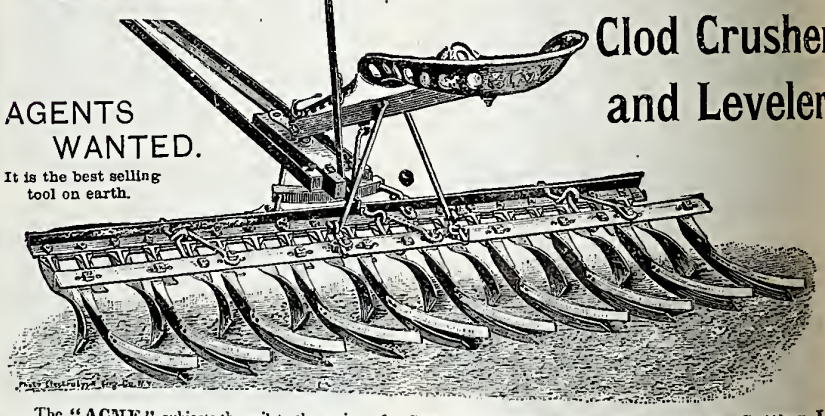

The "ACME" subjects the soil to the action of a **Steel Crusher and Leveler**, and to the **Cutting, Lifting, Turning** process of *double gangs* of **CAST-STEEL COULTERS**, the peculiar shape and arrangement of which give **immense cutting power**. Thus the three operations of **crushing** lumps, **levelling** off the ground, and thoroughly **pulverizing** the soil are **performed at the same time.** The **entire absence of Spikes or Spring Teeth** avoids pulling up rubbish. It is **especially adapted** to inverted sod and hard clay, where other Harrows utterly fail; works perfectly on light soil, and is the only Harrow that **cuts over the entire surface** of the ground.

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor. B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, MAY, 1884. No. 5.

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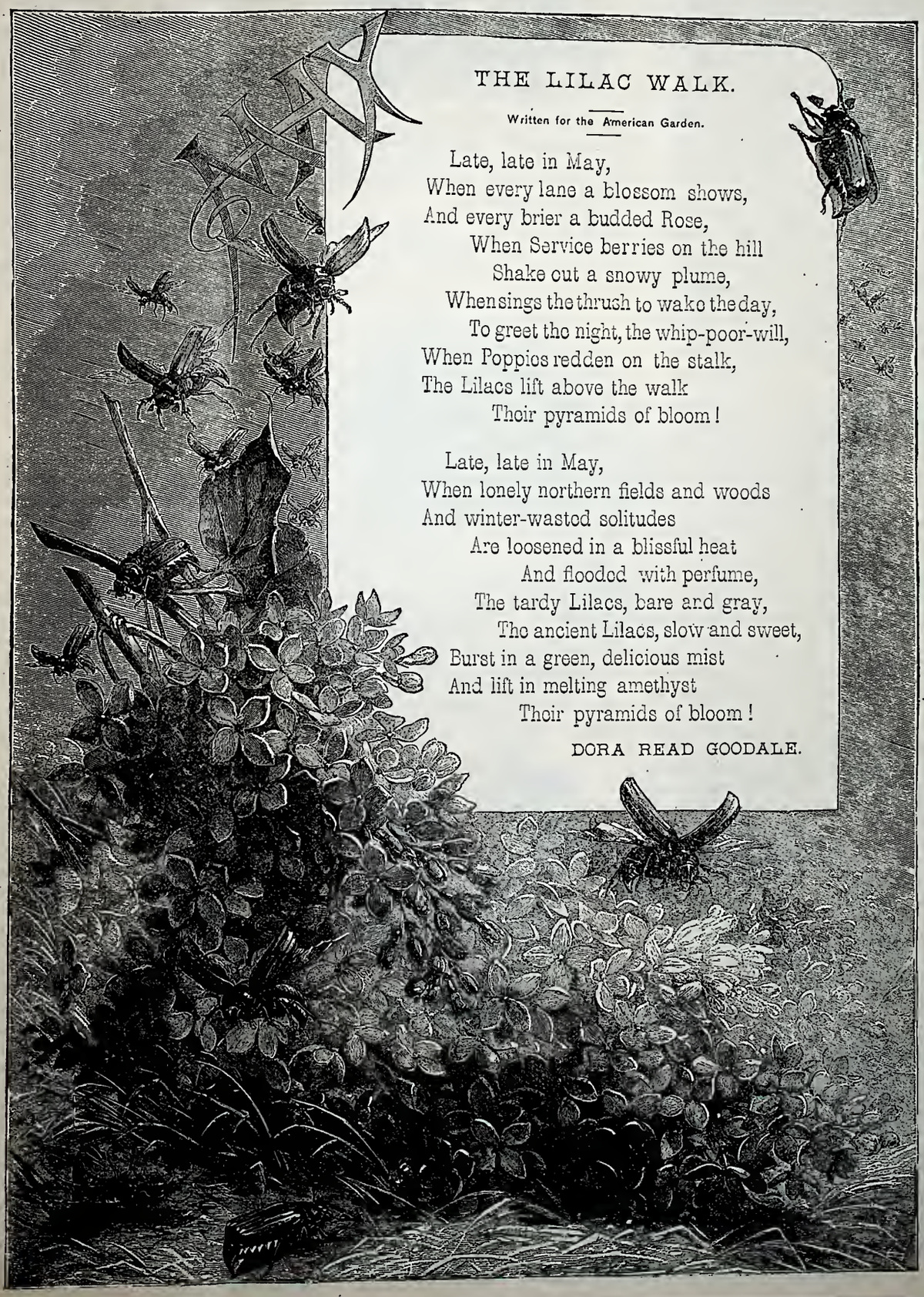


THE LILAC WALK.

Written for the American Garden.

Late, late in May,
When every lane a blossom shows,
And every brier a budded Rose,
When Service berries on the hill
Shake out a snowy plume,
When sings the thrush to wake the day,
To greet the night, the whip-poor-will,
When Poppies redden on the stalk,
The Lilacs lift above the walk
Their pyramids of bloom!

Late, late in May,
When lonely northern fields and woods
And winter-wasted solitudes
Are loosened in a blissful heat
And flooded with perfume,
The tardy Lilacs, bare and gray,
The ancient Lilacs, slow and sweet,
Burst in a green, delicious mist
And lift in melting amethyst
Their pyramids of bloom!

DORA READ GOODALE.

The Vegetable Garden.

SEASONABLE HINTS.

Aeration of the Soil.—Many persons suppose that the main object in spading or plowing the ground is to cover the fertilizers and to prepare a smooth seed-bed, while they overlook entirely the very important action of aeration. Without sufficient air in the soil the fertilizers applied to the land would remain inert, and the feeding roots would be deprived of considerable material indispensable to the growth of the plants. For these reasons it is of the utmost importance to break up, mellow and pulverize the soil as much as possible before planting and to keep it in an open and loose condition throughout the growing season.

Spading Forks, if not entirely unknown, are used too little in many gardens. In small inclosures where plowing is not practicable, and for the preparation of a perfect seed-bed, a fork is as superior to a common spade, as a saw is preferable to a knife for cutting a log in two. The only difficulty with spading forks is to find a perfect one; most of them are so poorly made that they break under the slightest strain. In buying one take only the best, even at double the cost of a poor one, which is too dear at any price.

Sweet Potatoes.—The generally prevailing idea that Sweet Potatoes can be grown on sandy land only, deters many from attempting to raise this excellent vegetable. There is no doubt that certain sandy soils produce tubers of better quality than others, but if the ground is only thoroughly drained and properly prepared, satisfactory crops may be grown on comparatively heavy soils.

Raising of plants has developed into so considerable an industry that they are now furnished by all seed and plant dealers, and for small quantities it will be found cheaper to buy than to raise them. Those who wish to grow their own plants may easily do so by placing the tubers—generally cut in two lengthwise, with cut side down—in a moderate hot-bed, and covering them with two to three inches of light soil. Half a dozen tubers are enough for a family garden. The sprouts will be fit for planting in about a month from the time of starting them.

The first of June is early enough for planting the sprouts in the open ground. It is not necessary that the soil should be very rich, but it must be well worked and mellowed, especially if of a clayey constitution. In the garden we prefer to plant them in rows four feet apart, and about eighteen inches in the rows. In field-culture, three by three feet is the usual distance of planting.

Sugar Corn.—There is nothing gained by planting Corn before the ground is thoroughly dry and warmed. If planted sooner the seed will frequently rot, and if it should sprout, the growth will be sickly and puny, and inferior to that planted later under more favorable conditions. The chief aim to have in view is to provide a continuous succession of ears fit for use throughout the summer. To secure this, a very early, a medium and a late variety have to be planted at the first planting, to be followed by other plantings of the medium or later kinds every two weeks up to the latter part of July.

LETTUCE—VARIETIES AND CULTURE.

Perhaps no garden plant is more universally grown than the Lettuce. No garden is so small or so large that it can do without its Lettuce bed. We find it as often in the unkempt garden of the rude cottager as on the symmetric border of the wealthy amateur. One of the earliest salads of spring, its fresh and tender leaves are always acceptable as a grateful change from the winter bill of

BLACK-SEEDED BUTTER LETTUCE.

fare. Perhaps it is this circumstance that makes it so universally esteemed, for it must be confessed that its succulent leaves possess very little nutriment.

Although, like almost all garden plants, the Lettuce thrives best on rich soil; and, with careful culture, it will grow and yield a passable crop in almost any location, provided only that the seed is sown early in the spring,

CURLED BUTTER LETTUCE.

so that the plants may grow during the cool season. Indeed, the Lettuce thrives remarkably well without culture. Last season we fertilized a newly made lawn with compost from a heap on which had been thrown the refuse from the previous summer's Lettuce bed. The result was thrifty plants of Lettuce, that were scarcely behind those from carefully sown seed in the garden plot, out-

COS LETTUCE.

stripped the grass and weeds. Some of these plants, gathered for the table, were found to be tender and of fine flavor.

This method of growing Lettuce, however, is not to be recommended. It is safe to say that the majority of people who grow Lettuce in the garden never have it at its perfection. It is almost always sown so thick that the plants have but half a chance to develop. Many who saw our fine headed plants of Lettuce last season, looking like little Cabbages, with their leaves covering a circle a full foot in diameter, remarked that they had never seen such large and finely-headed plants before. The secret of it all is good soil, clean cultivation, and giving the plants plenty of room. The seeds were planted in rows, fourteen inches apart, and the plants were thinned in the rows by degrees, as they were wanted for use, until the last ones were twelve inches apart. Of these large plants a single one was sufficient to supply the family for a meal. It is a gain to thin out Lettuce in this way, because, the later plants having a chance to develop to their full size, furnish a more abundant crop from the bed than if all were left crowded together, so that none could grow as large as they will. Some gardeners think that Lettuce will not head well unless the plants are first sown in a seed-bed and afterward transplanted. Possibly ours might have headed still better had they been grown in this way. But, are headed plants better for use than others, do you ask? Yes, they are better, because the inner leaves, being blanched, are more tender and delicate in flavor than the outer ones. As the plants become large the outer leaves become bitter, while the inner ones remain as tender and sweet as were the outer ones when first fit for use.

The varieties of Lettuce are very numerous, though all may be referred to three general classes: those that have comparatively smooth leaves, with straight margins; those that have crimped and ruffled leaves, and those that have long, pointed, upright leaves. The varieties of the first class head best, though all of these do not form heads; those of the second class are most beautiful in appearance. The third class, the Roman or Cos Lettuces, though much grown in Europe, are not much prized in this country.

Out of about sixty varieties of Lettuce tested last season, we found the French Imperial head, the Deacon, and the Salamander produced the finest heads. The Black Seeded Butter, Golden Stone Head, India Head, and White Cabbage all formed very fine heads.

The most beautiful varieties were Green Fringed and Boston Curled. The first of these has a very finely-ruffled border; while, of the second, the whole leaf is a mass of the most intricate ruffles and convolutions. There are several red varieties, but their color is too dull to be attractive.

Among the earliest sorts were the Tennis Ball, of which there are two varieties; the White Forcing Head, the Prize Head, and Curled Simpson. These were very little in advance of many others, however. Indeed, twenty-two sorts were all called fit for the table the same day as were these. The new American Gathering, Prize Head, and Ferry's Early Prize Head were, to all appearances, the same; also the Curled Simpson seemed the same as the Perpetual, and the Hammersmith Hardy Green was not distinguishable from the Hardy Green Winter.

The Deer Tongue, a new variety, sent out last season, is remarkably distinct. It evidently belongs to the Cos family, though quite unlike the other varieties of this class. It has very long, pointed leaves, which grow nearly upright. In flavor it is very sweet and tender, and with us it retained these qualities until almost all the other varieties were quite bitter.

ELM.

WATER-MELON RAISING.

I have always done well in raising Water-melons; chiefly, I think, because I had just the ground essential to success—new land, from which timber had lately been removed, and the soil of a sandy, porous character. The decaying roots in ground lately occupied by timber insure perfect drainage, and I consider it next to useless to attempt to raise Water-melons on land not well drained. In the first place, the earliest Melons not only bring the best prices, but are best in both yield and quality, and you can start any crop much earlier on drained than on undrained land; in the second place, although this is a very succulent fruit, wet is more damaging than drought, although drought is destructive, and drained land is neither so wet in wet weather nor so dry in dry weather as undrained land.

The best soil for Water-melons is, as I have said, a light, dry, sandy one. Such a soil is warm, and the Water-melon requires heat. It is also loose and light, and Water-melons never do well on a compact soil. If a hard rain compacts the ground it will greatly damage the crop. This is another reason why roots in the ground are advantageous—they keep it loose and friable.

A southern slope may be desirable, but I have raised my best Melons on the brow of a very high hill, and better on a northern than on a southern slope; why, I cannot say. It is contrary to what I had anticipated.

The earlier I can plant the better Melons I raise. In this latitude (the fortieth parallel) late planted Melons are liable to shrivel before maturing. Those that do mature lack the delicious flavor of those planted earlier. Melons are much more liable to shrivel and fall off on old land than upon new.

I have settled down to putting the hills not more than six or seven feet apart each way. Put several seeds in a hill, and, when the plants are well up, thin out to one to each hill, of course leaving the strongest and best. I lay off the hills by running furrows with a broad, single diamond plow. I manure well in the hill, using hog manure. Any animal manure will answer, but I consider hog manure the best. Never use stable or other manure not fully rotted; the fermentation is injurious. I have heard a compost of muck and chip-dirt highly recommended, but have never used it. The hill should be broad, and just even with the surface of the land. Drop the seeds and cover them to the depth of a couple of inches; not deeper. This makes the hill, when covered, a couple of inches higher than the surrounding surface. I hoe a couple of times, but, after the vines begin to run, disturb them only enough to keep out the weeds.

If the bugs appear, I sprinkle the plants with soot or very fine wood-ashes, in the morning when the dew is on. This is generally sufficient. At times I have mixed a little lime with the soot.

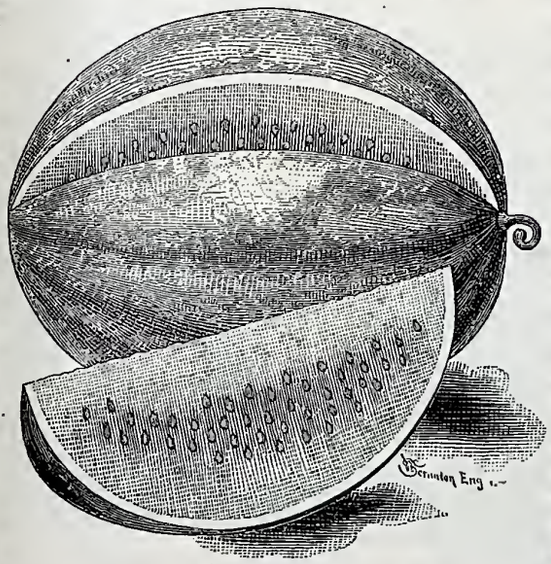
One hint about marketing: Rub the Melons till clean and bright. People like a nice-appearing Melon, and will pay more for, and buy more quickly, a clean, polished Melon, than one dirty and dingy. It is the work of but a moment to rub it clean.

JOHN M. STAHL.

THE AMERICAN CHAMPION WATER-MELON.

Our illustration shows the general appearance of this new variety of Melon, the many good qualities of which recommend it highly for market as well as home use.

It is a cross between the "Rattle-snake" and "Scaly-bark" Melons. It is of very large size, averaging from twenty-five to fifty pounds in weight; shape, oval; skin, dark green, marbled; rind, very thin and firm; flesh, sweet and of best quality; while, in carrying and shipping qualities, it is claimed to surpass all other varieties.



AMERICAN CHAMPION WATER-MELON.

CABBAGE CULTURE.

Vegetables of all kinds require the best of culture to have them tender and succulent, but I do not know of any which require more thorough cultivation nor heavier feeding than Cabbage, Celery excepted. Amateurs and farmers often wonder why the professional gardener can raise Cabbage so much superior to what they can produce with even the best of attention. This is easily explained; their best attention is not thorough enough to give that luxuriance of growth necessary to produce large, solid heads.

As early in the spring as the ground is in proper condition, give a good coating of manure, say three to four inches, spreading it evenly over the ground, then plow it in with a heavy furrow, then pulverize well by using some one of the excellent harrows now in use. (The "Acme" is the best.) Unless the soil and manure are well mixed, and the large lumps are well broken up, full benefit cannot be derived. The large lumps of soil contain much plant-food sealed up, and, unless the seal is broken by crushing them by harrowing, rolling, or other modes of reducing the soil to a finely pulverized condition, a considerable part of nourishment remains unavailable to the rootlets of the plants.

Early Cabbage, such as E. Jersey Wakefield, should be planted in rows two feet and a half apart, and twenty inches between plants, care being taken to place the plants into the ground to the first leaf. When only a few hundred are to be planted, it is generally cheapest for the amateur to buy his plants of some reliable gardener. Where thousands are needed it will be found more advantageous to raise them in a hotbed, as advised in previous numbers of THE AMERICAN GARDEN.

When the two first characteristic leaves are formed, transplant into another bed, about two inches apart each way; do not allow them to get drawn, but give plenty of air on all suitable occasions, to induce a short, stocky growth. Previous to planting into the open ground, have them well hardened off by full exposure night and day. Select a cloudy day for planting; it is not necessary that it be a rainy one, for if the plants have plenty of roots and the ground is well pulverized, there is but little danger of their dying. Keep the soil well stirred around the plants at all times after they are in the open ground, especially after rain; this increases their growth wonderfully.

The young plants are sometimes attacked by a small, black beetle *(Haltica striolata)*. Last year they were so numerous and destructive that, in some places, whole fields were completely destroyed by them; all kinds of remedies were applied with but little avail. One of my fields I saved by sowing some old Radish and Cabbage seeds alongside of the plants, to feed the beetles; then gave a good manuring around the roots of the plants with superphosphate of lime, and worked it into the soil. They soon left the large plants for the small seedling, and the stimulating effect of the phosphate made the old plants too large and tough for them by the time they had the smaller ones eaten up; but the smell of the superphosphate in itself seems to be repulsive to this insect pest.

Another insect which we have to contend with is the Cabbage worm. It is generally not so very damaging to early Cabbages as to late ones, owing to the heads of the former getting well hardened up before the butterflies make their appearance. I have tried a good many remedies for this pest, but nothing has been so successful with me as the Persian Insect Powder, dusted on with small bellows. This powder is also good for destroying the aphis which frequently attacks Cabbage during dry weather. But, all considered, the best repellent of all insects injurious to Cabbage is to maintain a strong, vigorous growth by the use of plenty of manure and thorough cultivation.

M. MILTON.

VEGETABLES IN GRAPERIES.

A reader suggests that the ground space in graperies, which he finds generally bare, be used for forcing vegetables. The difficulty in growing vegetables in graperies is that, when the vines start into growth, the interior of the house becomes too shaded for vegetable growing; and previous to this, while the vines are kept dormant, it is too cold.

Tomatoes require a great deal of sun to ripen, and, if they are to be grown in a grapery, we would advise to train them on stakes and cut back the side shoots severely, as, in the shaded position, there will be a strong tendency to develop foliage to the detriment of fruit.

Spinach and hardy Lettuce sown in autumn do very well in graperies.

The Fruit Garden.

SEASONABLE HINTS.

The lateness of the season has naturally caused the accumulation of a large amount of work to be performed in a very short space of time, and in the haste and hurry it is highly probable that many a contemplated fruit garden has been left unplanted. But those who are really in earnest and will do the work properly may still plant trees and shrubs of nearly all kinds without running much risk of loss. Of course, the later they are planted the more care has to be given to the work and the more severely has the wood to be cut back.

Strawberries may be planted with safety up to the middle of May. In planting thus late it is of great importance to pinch off all the buds and flowers, to keep the roots protected against sun and wind, and to press the soil firmly around the roots. We have planted acres of Strawberries in May, without more loss than from those planted a month earlier.

Coal Ashes are strangely undervalued in the fruit garden. Instead of being a nuisance, as which they are generally regarded, they are of great value not only in ameliorating the soil, but as preventives against borers, when spread around Currant or Quince bushes. Dr. Sturtevant relates that in the garden of Mr. B. J. Swan at Geneva, N. Y., there are extraordinarily thrifty Currant bushes, to which coal ashes have been applied for many years, and which have not only been free from the borers, but also from the attack of the Currant worm. There are also Quince trees of equal thriftiness which have been under like treatment, and in the lawn are a number of Mountain Ashes, some of which have been treated with coal ashes and the others have not, and the difference in vigor is extremely well marked in favor of those to which coal ashes have been applied. The ashes for this purpose are heaped up about the stem to a height perhaps of six to eight inches and extending about two feet from the trunk.

Scale Insects are becoming very destructive to fruit trees and are spreading rapidly over the entire country. Kerosene emulsions are the sovereign remedy against this pest. In answer to several inquiries about the mode of preparing emulsions, we give Prof. Riley's directions:

"Emulsions with milk may be made of varying strength, but one of the most satisfactory proportions is two parts of refined kerosene to one part of sour milk. This must be thoroughly churned (not merely shaken) until a butter is formed which is thoroughly stable and will keep indefinitely in closed vessels and may be diluted *ad libitum* with water when needed for use. The time required to bring the butter varies with the temperature, and both soap and milk emulsions are facilitated by heating the ingredients. Ordinary condensed milk may also be used by thoroughly stirring and beating it in an equal or varying quantity of kerosene.

"The diluted emulsion when prepared for use should be finely sprayed upon the insects to be killed, its strength varying for different insects or plants and its effect enhanced when brought forcibly in contact with the insects."

CULTIVATION OF CURRANTS.

Currant culture, if not entirely abandoned, is neglected to a great extent, owing to the ravages of insects infesting the bushes, and yet a little care will conquer all these.

When the stems are eaten by borers, rendering them hollow, and in many instances causing them to break, trim the bushes in the fall or early spring, and where a hollow stem is found cut away till solid wood only remains. Burn all such prunings. If scale infests the stems, scrape them off, or wash the stems with strong potash water.

For worms that eat the foliage, apply one ounce of powdered white hellebore thoroughly stirred into a pailful of water; sprinkle the foliage with this from a watering-pot. Hellebore is not hurtful to man, and can be used on Currants even when fruit is ripe enough to pick, if the fruit is only well washed before using. In the absence of hellebore, hot water, a little hotter than one can bear the hand in, applied to the foliage will kill most of the worms, or, at least, hold them in check until hellebore can be procured.

The Currant span-worm, so called from arching its back at every step, is more difficult to kill than any other of the leaf-eating caterpillars. Should it attack the foliage while the fruit is upon the bushes, double or treble the amount of hellebore given above, and apply in the same manner. After the fruit is gathered, should they infest the bushes, use paris green, a tea-spoonful to a pail of water, applied with a watering-can, or apply "slug-shot" dusted over them.

In autumn, after the fall of the leaf, clear up all the litter from around the bushes and burn it, then apply a top dressing of air-slacked lime or potash in some form; wood ashes are especially valuable for this purpose.

This dressing destroys most larvæ of all insects that burrow in the soil near the bushes. Clean culture is a great foe to most injurious insects. Feed your ground with abundance of well rotted manure, and bushes bending under the weight of fruit will be your reward.

J. B. Rogers.

CARE OF RASPBERRIES.

During late spring and early summer the cultivation of Raspberries should be frequent and thorough, for the work will soon have to be discontinued on account of their fruiting. If planted as they should be, in rows five feet apart, the horse cultivator can be used until the fruit is within a few weeks of ripening. This leaves the ground in fine condition; and, in order to keep the rows clean, I put a generous mulching around the plants as soon as cultivation is discontinued. This mulching not only keeps down the weeds but it also prolongs the fruiting season. The roots are kept moist by the mulch, and additional stimulus and nourishment are given to the plant, so that many of the late berries, that would otherwise not ripen, or dry up prematurely, are sustained and brought to perfection.

The same treatment is excellent for all other garden fruits. It is the most effectual way to guard against drought in summer and against frost in winter. It also prevents plants and trees from being starved for want of nourishment; it is, in fact, the most natural way for a tree or bush to get its nourishment, by filtration from a supply on the surface of the ground.

Raspberry and similar vines should be well supported quite early in the season, that the canes will not break or the weight of the fruit draw them over into the spaces between the rows. Wires stretched along each side of the rows, and supported by stakes, will keep the canes up as well as anything, and are easily put up and taken down. The wires should be supported at short distances, in order to prevent them from sagging where the rows are long. The height of the wires from the ground must, of course, depend somewhat upon the size of the variety grown; for average sized plants they should be placed about two and a half feet from the ground. As the canes grow to the top of the wire they should be spread out in fan shape, and fastened loosely to the wire. If care is taken to fasten them all in this way only one wire to a row would be needed.

Through the growing season the suckers springing up outside of the hill and row should be treated as weeds unless more plants are wanted. After the bearing season is over the old fruiting canes should be cut out and burned, leaving only three or four of the new sprouts. These new canes ought to be cut back to a height of four feet, and the laterals to ten or twelve inches.

For yielding, length of fruiting season, and keeping qualities, the different varieties of Black Raspberries are much superior to the Red, but in quality and delicacy of flavor they are far excelled by the latter.

The Turner for early and the Cuthbert for late are the best Red Raspberries generally cultivated, although there are many excellent varieties of later date. Of the Black Caps I favor the Gregg, as being of good flavor, large and very prolific. It is not so early as the Souhegan and some other varieties, perhaps, but its fruiting season is longer and later than any other that I have grown.

W. D. Boynton.

GRAFTING GRAPEVINE CANES.

In reply to several inquiries about the practicability of grafting the canes as well as the roots, Mr. J. Jenkins, author of the "Art of Propagation," says: "Lay the canes down, cut out the buds at each joint, plunge a knife directly through the nodes, and insert the cions through the joints; the buds having been removed, their places are supplied by the cions or grafts, and cell circulation is soon established. The cions are prepared as for cleft grafting, except that a shoulder is left on either side, which rests on the cut surface of the cane. The cane and the inserted cions are then covered with soil to the upper buds."

PERSIMMONS SUBSTITUTING WHISKY.

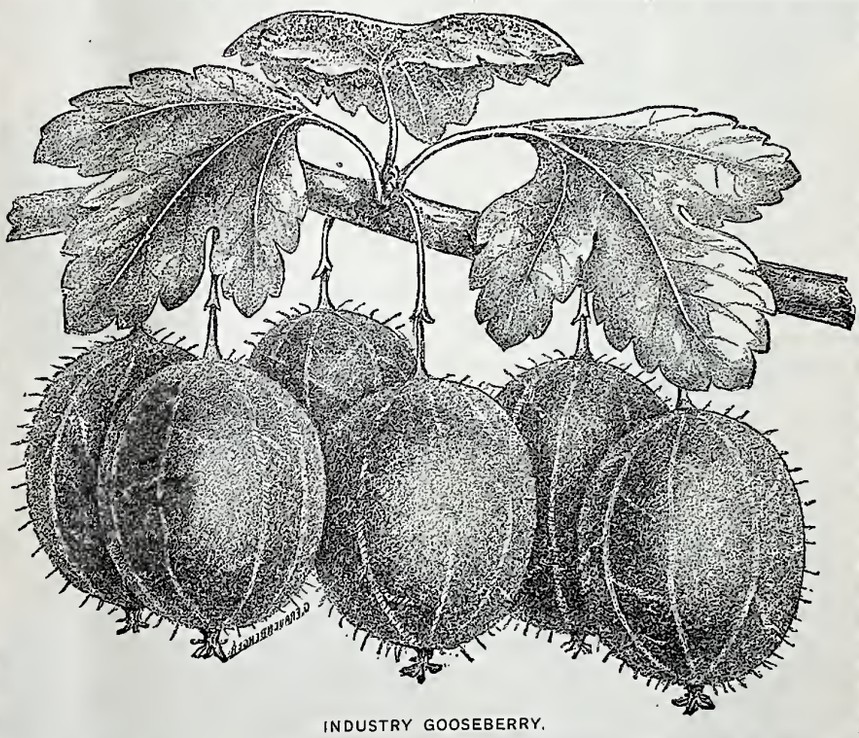
The veteran pomologist, Judge Samuel Miller, of Missouri, has made the grand discovery that Persimmons serve as a complete substitute for whisky. He says: "Temperance has been my doctrine for many years, yet for a long time I thought a little whisky early in the morning almost indispensable for my stomach's sake; but, like all things else, it sometimes runs out. In its stead Persimmons were tried, and found to answer the purpose to a fraction."

It is to be hoped that they may prove an equally effective substitute at other hours of the day.

THE INDUSTRY GOOSEBERRY.

While the improvement in Strawberries has been so decided and rapid as to appear marvellous almost, American Gooseberries have, with the exception of the "Downing," remained so primitive that most persons are not aware of the possibilities of this class of fruits. Those familiar with the excellence of the improved foreign varieties have naturally been desirous to grow these here, and thousands of trials have been made to acclimatize them, but only in very few instances have they proved successful, the bushes being destroyed by mildew after the second or third year. A Gooseberry possessing large size and good quality, combined with freedom from disease, will therefore be hailed with joy by all lovers of good fruits.

The "Industry" Gooseberry now being introduced by Messrs. Ellwanger & Barry, Rochester, N. Y., is now recommended as fully supplying this desideratum. Although of foreign origin it has done admirably upon the grounds of the introducers for three seasons, being a vigorous grower, an immense yielder, and showing no signs of mildew. Its deep red berries are of excellent quality and of the size shown in our illustration.



INDUSTRY GOOSEBERRY.

GROWING PLUMS.

There are many fruits which once abundant in our markets are now met with in limited quantities, and of these the Plum is a notable instance. This is due to two causes, the destruction of the tree by the disease known as the "Black Wart," or "Black Knot," and of the fruit by an insect, the curculio.

We have no space to discuss the mooted question of the cause of the former, whether it be of vegetable or insect origin, but two facts seem to be proved, that it is contagious, spreading rapidly over the whole tree, and from one tree to another, and that the only sure remedy is the free use of the knife, cutting away all diseased branches and burning them. We have, however, where the wart attacked a large and important limb, saved amputation by cutting out the diseased portions and binding salt upon the cut, and the limb soon healed.

This disease also attacks the wild Plum, and sometimes the wild Cherry, and where these grow in the vicinity they also should be cut down when diseased, lest the infection spread to the orchard. Too much importance cannot be attached to burning the infected limbs, as if simply thrown on the ground the disease from them spreads to the healthy branches.

We have no hesitation in saying, that by beginning with healthy young trees, and by care, Plums can be grown in spite of the black wart.

The curculio is a more serious enemy, but is by no means invincible. He attacks not only the Plum, but the Cherry, Apple, and sometimes the Pear. It is probably owing to the Apple orchards that of late years he has increased so prodigiously, as at one time he was thought only to attack the Plum, when meanwhile he was propagating by millions on the fallen Apples.

Where a Plum is to be had, however, the insect prefers it to any other fruit. The mature curculio, which is a small, dull-colored beetle, emerges from the ground when the young Plum is about the size of a small Pea, and continues to hatch for about three weeks. It stings the fruit, making a crescent-shaped mark, and lays its eggs therein. These soon hatch into a white worm, which burrows into the stone, as soon as it reaches which the fruit falls. The worm then goes into the ground, where he completes his transformations. The remedies are many, all in a measure efficacious. They are mostly preventive, for where the fruit is once stung cure is usually impossible, although we have saved Plums by carefully cutting out the egg just after the fruit was stung.

If the trees are syringed and dusted with air-slacked lime the insect will not sting the fruit. But no half-way measures will avail in this; the wash must be begun as soon as the young fruit forms, and continued until the time for the insects to come out of the ground is passed; this time can only be told by observation. If the lime is washed off by rain, it must be immediately renewed, and especial care must be taken to coat the young fruit well.

Paving around the trees prevents the increase of the beetle in the immediate vicinity; salting the ground is also efficacious. Trees grown in a hen-yard often perfect fine crops of fruit, as the hens eat the beetles as they come out of the ground. But the best way is to destroy the beetles by shaking them from the trees; the insects on being disturbed feign death and fall to the ground. If a sheet is spread under the tree, and the trunk and branches sharply struck with a cloth-covered mallet, so as not to bruise the bark, the beetles will fall upon the sheet and can be destroyed. This should be done morning and night for a period of about three weeks. All fallen Plums, as also fallen Apples and Cherries near by, should be daily gathered and burned.

Following these rules a good crop of Plums may yearly be obtained, and the result is certainly worth the trouble. For family use it is best to plant dwarf trees, as they are more manageable, and the Plum also always does well, trained espalier, or as a wall fruit.

The choice of varieties must be left to individual taste, but for home use the proportion should be two Greengages to one of every other kind.

In some of the nurseries of Central New-York, Plums are grown in great quantity and perfection, the curculio being destroyed as we have directed, and there is no reason why any one who has a small plot of ground should not each summer have a crop of Plums. PRUNUS.

WATERING STRAWBERRIES.

Growing Strawberry plants need a generous supply of water. From the day when the first blossoms appear, until the well-developed fruit is ready to be plucked, the soil where Strawberry vines stand should be kept very moist. The crop of fruit is often damaged seriously by one or two days of hot and dry weather when the plants are in blossom, or soon after the berries begin to grow. If one has an abundance of straw, old hay, or coarse manure, it will pay to spread such material between the rows and close around the hills, for the purpose of keeping the soil moist. Coarse straw or hay can be spread most advantageously when they are wet.

An ordinary sized Strawberry plot will require only a few minutes' labor with a large watering-pot, to give the plants a generous supply of water every evening. Sawdust, tan-bark, and chip-dirt, when spread over the ground, keep the soil moist and will greatly retard evaporation.

Those who succeed in producing mammoth berries use manure unstintedly and keep the soil well watered. It is a good plan to keep the ground between the rows of Strawberry vines covered with litter, so thickly and evenly that grass and weeds are all smothered. Then to apply water every evening when the weather is not wet and lowery. Where salt hay can be obtained nothing is better for mulching, as it is always clean and free from weed-seeds, is not easily blown off by the wind, and, after the bearing season, can be dried and stored away for another year. S. E. T.

The Flower Garden.

SPRING FLOWERS.

As breaks the moon-rise o'er the sea,
  As steals the morning on the night,
So the slow dawning of the spring
  Is flooding all the earth with light.
O'er uplands brown and dusky hills,
  Its "cloth of gold" the sunshine flings,
Where fragrant south winds, hurrying by,
  Drop blossoms from their balmy wings.

On sunny banks, whose grassy slopes
  Are pied with Violets blue and white,
The Primrose, with its golden eyes,
  Climbs upward to the mellow light;
And, nodding by the meadow brook,
  The knots of yellow Cowslips blow,
And tufts of grass and tender leaves
  Sway in the sleepy water's flow.

Beneath the dark and restless Pines,
  That whisper through the balmy night,
The Arbutus, mid its shining leaves,
  Is trailing blossoms pink and white:
And purple Wood-anemones,
  In sheltered nooks and valleys grow,
And Daisies, mid the tawny rocks,
  Gleam out like flakes of winter's snow.

But when the false and fickle winds
  Shall whisper to the listening trees
Of summer's bright and beauteous things—
  Her gorgeous bloom and scented breeze;
When earth beneath the changing skies
  Hath blushed in May-bloom, wept in showers,
The spring shall fold her weary wings,
  And vanish with the early flowers.

SEASONABLE HINTS.

Hardy plants of all kinds should be transferred to the open ground without delay, but with those liable to be injured by frost it is not safe to risk exposure to the open air before the latter part of this month.

Sowing Seeds.—The proper season for sowing seeds depends considerably on the character of the season. When this is very early, the first sowings may sometimes be made about the middle of April, but north of this latitude it is rarely of any real advantage to commit flower seeds to the open ground before the first of May.

Seeds may be sown in patches among the border plants, in rows or groups where they are to remain, or in seed beds, and afterward transplanted. In either case it is of the greatest importance that the seed is not sown too thickly, and that the soil at the moment of sowing is not too wet, especially early in the season.

The Depth of Covering Seeds varies with their size; large seeds, such as Lupins, Sweet Peas, Marvel of Peru, may be covered an inch or more, medium-sized ones from an eighth to half an inch, while the smallest ones succeed best when sown on the surface only, and slightly pressed down with the hand or a piece of board, which will imbed them sufficiently. There is far less risk in covering seeds too little than too much; if sown too deep they are longer in germinating, and the smaller ones are liable to decay.

Watering.—In dry weather it becomes necessary to water the seeds slightly from a very fine rose watering-pot. In the absence of rain this has to be repeated every day or two. When the seeds have once begun to swell they are peculiarly susceptible to injury from drought, and will speedily perish unless the soil is kept moderately moist.

HARDY PLANTS FOR EDGING FLOWER BEDS.

Many country and suburban folks have no greenhouse, or, beyond their few window plants, greenhouse flowers, but they have pretty and tastefully kept gardens, and blossoms in them from March till November.

As a rule our garden walks, flower-beds, and borders are cut out in the grass-plot, but not infrequently we find little garden patches where there is no grass-plot, but all the ground is used in beds, borders, cultivated plots and the necessary walks. Here we must use some special edging, as brick, tile, or wood, or prettier by far, grass-sod, Periwinkle, Box, or other appropriate plants. But circumstances must govern our selection. The situation may be sheltered or exposed, sunny or shady, the ground moist or dry, sandy or clayey; the beds may be large or small, and the subjects they contain, Roses or shrubs alone, tall or mixed perennials or merely a few annuals.

These things should be taken into consideration in our selection of edging plants. And we should use none other than those that are absolutely hardy in our neighborhood; for instance, *Santolina chamæcyparissas* and *Plumbago Larpentæ* are hardy in New-York, but barely so in Boston. And, in order to have lasting satisfaction, we should use plants of long perennial duration, like Rock Cress and Moss Pinks, and not short-lived ones or those of biennial nature, like Alpine Wall-flower and yellow Alyssum *(A. saxatile)*. As verges for walks evergreen plants should be used in preference to deciduous ones; for instance, Periwinkle, Moss Pink, Garden Pink, Thrift, evergreen Candytuft, white-leaved or gentian-leaved Veronica, Thyme, Stone-crop, Houseleeks, Box, Ivy, Statices, Sunrose *(Helianthemum)*, or creeping Euonymus.

It often happens, when we use grass-sod, Box, or Periwinkle around our beds, we also wish to have an inner border, as a circle of Rock Cress, Prunella, or Spring Orobus; and here we can use either deciduous plants, like the Orobus, or evergreen ones, like the Prunella, only observing that they are neat and compact, and shall continue to last throughout the summer. And they should be of lesser growth than the inner inmates of the bed. In this inner edging we may utilize two or more sorts of plants, especially in the case of deciduous ones. For instance, in a border of dwarf Irises we may plant a row of Crocuses, Snowdrops, Dog's-tooth Violets, Spring Beauty, or Little Squills. In an evergreen border, as of dwarf Veronicas or Stone-crop, these supplementary bulbous plants would be apt to grow so much as to set off patches of the regular border.

Among good edging plants that delight in open, sunny places, are Moss Pink, Rock Cross, Thrift, evergreen Candytuft, dwarf Veronicas, Garden Pink, Santolina, Thyme, *Stachys lanata*, Houseleeks, *Silene maritima*, Tomentose Cerastium, Spring Adonis, the dwarf form *(jucunda)* of *Aquilegia glandulosa*, *Erysimum rupestre*, Stone-crop, Aubrietia, dwarf Bell-flowers as *turbinata*, dwarf Irises, Rock Rose, *Statice incana*, Stellar's Artimesia, Prunella, Siberian Saxifragos, as *cordata* and *ligulata*, and *Geranium sanguineum*.

For shady places Periwinkle is better than grass or any other plant as an edging. Hepaticas, Creeping Alpine and Geneva Bugles *(Ajuga)*, Phloxes as *amœna* and *reptans*, dwarf Funkias, Sedums, as *ternatum*, native Violets, especially the variegated flowered *cucullata*, *rostrata* and *striata*, and Epimediums are also suitable for moderately shady places.

Many plants adapt themselves to sunny or shady places; for example, dwarf Irises, Violets, Periwinkle, Houseleeks, Pennsylvania Royal and Virginia Pinks, Epimediums, Bugles, Prunella and Orobus.

Where shrubbery beds and clumps are also used as the recipients of a miscellaneous collection of herbaceous plants, the above plants are quite appropriate as edgings; but, where shrubs alone occupy the beds, more characteristic edgings should be used. Say, *Euonymus radicans*, plain or variegated, Siebolds *Euonymus*, *Deutzia gracilis*, dwarf Retinosporas, as *plumosa* or *obtusa nana*, *Daphne Cneorum*, creeping Berberis, hardy Heaths, small-leaved Cotoneaster, *Azalea amœna*, and Ivy. Many other dwarf shrubs may be used for the same purpose, and even some, like the Virginia Itea, that grow to considerable dimensions, can be pruned so as to form neat dwarf edgings.

In open, dry, sandy places I find that hoary plants, as *Thymus lanuginosus*, *Veronica pectinata* and Santolinas, thrive well, but better still Stone-crops, Moss Pinks, and Cactuses, as *Opuntia Missouriensis*.

In very moist places we must have recourse to such plants as Gold-thread, Helonias, *Nürembergia rivularis*, Violets and the like.

Several plants—for instance, Lily-of-the-valley, Moneywort, and *Vinca herbacea*—might reasonably be expected to make excellent edgings, and so they would were it not for their inveterate persistence in spreading beyond their allotted space. Others, as the Mossy Saxrages, Androsaces, and Erinuses, that thrive so well in Europe and make such pretty edgings there, are not worth bothering with here; they refuse to be comforted. Although the above includes a numerous variety of plants, and many of them seldom seen in our gardens, I would say that I have grown them all for years.

WM. FALCONER.

PLANTING LILIES.

Lilies should be planted as early in spring as possible; that is, as soon as the ground has become dry and friable. If the necessary conditions are provided, few plants are easier grown, and yet it seems strange that many fail to meet with success. Lilies *must have* a deep, mellow, somewhat sandy, moderately rich soil, free from stagnant water. The bulbs should be planted four to six inches deep, according to their size, the largest ones the deepest, except *L. candidum* and its varieties, which should be covered but lightly, and planted in August or September. All Lilies may be planted in autumn as well as in spring, but with fall-planted bulbs, perfect drainage is still more essential.

COBÆA SCANDENS.

This is one of the most elegant and rapid growing climbers for the garden as well as the conservatory. The seed may be sown out-doors in warm, dry soil, but better success will be insured by starting it in small pots in the house and transplanting at proper time. For window boxes, and vases to drop over the front, it is especially adapted and desirable.

CULTIVATION OF CHRYSANTHEMUMS.

No class of plants thrives so well with as little care as the Chrysanthemum, and as a town-plant it has no equal. It seems to thrive equally well in the smoke and dust of large cities as in the open country, requiring only sun a few hours each day, rich soil, and occasional watering.

Small plants may be planted as early as the first of April,—but any time to the middle of May will be soon enough,—about as far apart as to allow from two and a half to three feet for each plant. This may easily be done where a border can be devoted to them alone; but when grown in a mixed border, where other plants are growing, a space of two feet should be allowed for the Chrysanthemum. The soil must be made rich with manure, and kept clean.

About the first week in June each plant should have the center of the shoot pinched out, which operation is known as stopping. A strong stick should be placed by the side of each plant, to which it should be loosely tied. In a few weeks there will have grown four to six more shoots four or five inches long. These must again be stopped, by continuing the process until the first of August; after which time every shoot should be allowed to grow, and not stopped any more. Keep the plant tied, so as to prevent its being broken by the wind.

By the first week in September many buds will be formed, and, if very large flowers are desired, one-third or more of the buds should be taken off. Some weak liquid manure should be given about the first of October.

If the plants are required for decorations in the house or greenhouse, they may be easily dug up, potted into different sized pots, according to the plants, and set in the shade a few days. They must be well watered, after which they may be placed in the sun until there is danger of frost, when they should be moved into a cool room or greenhouse, but not subjected to fire-heat more than to keep out frost. This is a very simple and satisfactory course of treatment, and can be carried out successfully by the merest tyro. For very large specimens, and for cultivation in pots, more time and attention are required, costing, of course, more to accomplish.—*John Thorpe, before the N. Y. Horticultural Society.*

TYPES OF CHRYSANTHEMUMS.

SPRING FLOWERING BULBS.

Tulips, Hyacinths, and Crocus bulbs should be taken up during this month, if they are in beds of mixed plants; but do not cut off their leaves, as it is the leaves which assist the maturing of the bulb, and the stalk must wither in order to ripen the bulb thoroughly. Let them lie in the sun a day to dry, and pack away in paper bags until September, when they should be replanted. If they have to be taken up before the leaves are entirely dry, place them close together in a dry spot, and cover with an inch or two of soil. In two or three weeks they will have ripened completely, and may be stowed away.

But, if they have not been planted three years, they need not be disturbed, and as their foliage withers completely it can be cut off, and the bulb left to repose. Coleus, or any kind of bedding-out plants, may be put into the same beds without injury to the bulbs. Mignonette and Sweet Alyssum seeds can also be sown around the edges of these beds even as late in the season as June, and the plants will make a fine show and perfume the air by the last of August.

In planting out bedders it is well to bear in mind that, in a couple of months, they will have become six times as large as when planted, and will, therefore, crowd each other sadly unless plenty of room is given to them. It is the fashion now to peg down the shoots of variegated plants, and hair-pins are excellent for this purpose. Plants that break off easily are better protected from wind and thunder-storms if they are thus arranged, and, when the first frost comes, they are also more easily covered.

DAISY EYEBRIGHT.

SWEET PEAS FOR CUTTING.

Select a good deep soil in the kitchen garden, and take out a trench as if for Celery; dig in a quantity of rotten manure at the bottom, and then fill in the soil nearly level with the surface; scatter the seeds thinly, and cover them with about one inch of soil. The young plants will soon appear, when some coal ashes should be scattered over them. Put stout branched sticks on each side of the row, and if cold winds prevail, a few evergreen branches will prove a great protection, but they must be removed before the vines grow.

The plants grow rapidly, and will soon come into flower; then is the time to apply a good coating of rotten manure at least two feet wide on each side of the row, and if dry weather prevails give copious supplies of water, and liquid manure at intervals of a fortnight.

Gather the fully expanded blooms before they fade, as if allowed to seed they soon check the successive formation of flowers. For cutting, a good mixed packet of seed will produce nearly all colors, but they may all be obtained separately.—*London Garden.*

The Window Garden
AND GREENHOUSE.

THE CLIMBING SOLANUM.

(Solanum Jasminoides.)

Last spring I procured a plant of the climbing Solanum and I am so well pleased with it that I want to tell the readers of THE AMERICAN GARDEN about it. It is a slender growing vine having pretty foliage. It supports itself by curling the stems, to which its leaves are attached, about whatever it comes in contact with. During summer my plant made a growth of over six feet. It did not bloom until fall, but since then it has had flowers nearly all the time. These flowers are about as large as those of the Catalonian Jasmine, star-shaped, and of a pearly white. Sometimes they have a slight lavender tinge, and in a few I have seen a faint rosy tint. These flowers, which are borne in clusters of about half a dozen each, have a delicate grace that I have never seen in any other climbing flower. The petals have a look like that of the finest crape, being creased or wrinkled like crape along the center. I find that by cutting it back often a great many branches can be made to grow, and all of these produce flowers.

It has been one of my most satisfactory plants during the winter. I have it trained up a large Oleander, and it has wound itself all through the top, and as both plants are in bloom at present, the effect is charming, as the contrast between the rosy flowers of the Oleander and the white ones of the Solanum is so decided. A good many of the new branches hang from the branches of the Oleander in festoons of graceful foliage. The buds are charming before they open, being pearly white, and having so close a resemblance to berries that they are often mistaken for them. The plant is a most satisfactory one at all stages and seasons. It would be very effective when trained along conservatory rafters, or about a window, I think. Mine is potted in ordinary garden soil made light with sand. It requires considerable water. The red spider would trouble it somewhat if I did not make it too wet for him.

E. E. REXFORD.

THE AMAZON LILY.

(Eucharis Amazonica.)

Of all the white flowers exhibited at our flower shows, none attract more general and deserved attention than this comparatively new plant. It is a native of Granada, belongs to the Amaryllis family, and requires, for winter forcing at least, hot-house treatment. The flowers, which are produced in trusses of from four to eight, are of rare beauty, chaste in form, pure white and deliciously fragrant, and—what gives additional value to the plant—may be produced at any season of the year. In fact, a dozen of plants properly managed will furnish flowers all the year round.

There are two ways of growing this plant. One, says a writer in *Gardening Illustrated*, is to pot them without division, the way in which large specimens are obtained; and the other is to divide frequently, growing the large bulbs in single pots. The latter plan answers best for room decoration. They may be grown well either in loam and peat, in loam and leaf-mold, or in pure turfy peat. To bloom them freely they require a period of rest after a season of growth. This rest is obtained by moving the plants to a lower temperature, and, as they are evergreen, water must never be withheld so far as to cause the leaves to suffer. In summer the plants may stand a time in the open air, and such plants throw up strong spikes after being placed in gentle heat again.

By following a system of alternate growing and resting periods, several crops of flowers may be obtained in one season; and by growing a sufficient number of plants to have relays always coming on in succession, plants in bloom may always be had. Bottom-heat, where available, is useful for pushing forward sluggish bloomers. They are very accommodating as to temperature, but during the time of growth they should have a night temperature of at least 60°. As they delight in moisture, the pots must be well drained, and if a little crushed charcoal and sand be

THE AMAZON LILY.

mixed with the soil, to increase its porosity, it will be an advantage. Clear soot water should be given occasionally when growing freely or blooming.

HOME-MADE FLOWER POTS.

A correspondent of the *London Garden*, having observed that a mixture of clay and cow manure with a little sand becomes very hard when dried, conceived the idea to mold flower pots out of this material. He first molded them in ordinary flower pots, but, on account of their breaking so easily, substituted an iron mold. These pots, after being thoroughly dried, were employed for potting Geraniums, Verbenas, Lobelias and other bedding plants.

I had the satisfaction, says the writer, of seeing the plants do well in their clay covering, and the pots bore the watering well. In May they were plunged into the summer beds with the plants, and I calculated that the clay and cow manure, gradually falling to pieces, would help to support the plants and would first induce it to form a ball of roots, so that in autumn its removal would be attended with little loss.

The result has been more satisfactory than I anticipated; the clay pots, in most instances, have remained entire, but the roots have pushed through the bottom, and above the rims, and the plants came up with a compact ball, very different from others turned completely out of the pots, which have sent down long roots, half of which they had to lose on removal. I have had some of these pots preserved with the plants in them as they were taken up, and I am persuaded the contrivance will be of considerable value to amateur horticulturists.

EMBELLISHING A WINDOW.

The following excellent plan for decorating a window is given by Mr. John G. Barker:

"Procure a pan twelve or more inches in diameter and six inches deep; place in the center a seven or eight inch pot, then place proper drainage and soil in the pan, and plant *Lycopodium denticulatum*, or any of the varieties of Tradescantia, which will cover the surface and hang over the sides. In the pot in the center put a Dracæna, Palm, or any plant which suits your fancy, and place the whole in a stand just large enough to hold it and set opposite the window, and with one or two brackets on each side of the window for such plants as you may choose, you have a decorated window with very little trouble. A few cut flowers may be placed in the pan, and will last a long time. The vines will completely hide both pot and pan, and the center plant can be changed whenever desired without breaking up the arrangement. If more than one is used in a room they should not be alike."

Such an arrangement requires but little care, yet, as in the cultivation of all house plants, the great aid to success is enthusiasm in the work.

COMPARATIVE HARDINESS OF PLANTS.

On the morning of the great freeze, last winter, writes a correspondent from Tennessee, the thermometer stood 8° below zero outdoors, and 34° above in the warmest part of the greenhouse. But further from the tank no thermometer was necessary to indicate the frost; all the Coleus were killed, all the Begonias, my *Hoya carnosa*, together with my other tender plants, while Peperomias, Maranta zebrina, *Primula Sinensis*; Geraniums, Bowardias, Azaleas, Camellias, etc., were all right.

Tradescantia discolor was killed, while *T. zebrina*, in the same basket, remained uninjured.

IMPORTANCE OF DRAINAGE.

The Hon. Marshall P. Wilder, who has cultivated house plants for the past fifty years, considers perfect drainage, whether in pots or the open fields, the basis of all successful cultivation. He places moss over the crocks used for drainage in pots, and the roots pierce into it. If the surplus water does not pass off, the soil will become sour, the roots rot, and the plants die. In mild weather house plants should be taken out on the piazza in shade, to have a little fresh air, which will revive them wonderfully.

ABUTILON.

The different species and varieties of Abutilons form a most beautiful and useful class of plants belonging to the natural order Malavaceæ. They are commonly known under the name of Flowering Maple, from the resemblance their leaves bear to those of the Sugar Maple. Indeed, the whole plant strikingly resembles a dwarf Maple tree. They are a class of hard-wooded greenhouse shrubs, most of them attaining a height of from two to six feet, blooming abundantly at all seasons of the year; and, in addition to this, several of the varieties have beautiful mottled or blotched leaves, usually of a bright yellow color on dark-green ground, giving them more the appearance of a piece of Mosaic work than the foliage of a plant.

When grown in pots, during the winter season, they furnish a quantity of beautiful, pendulous bell-shaped flowers, that vary in color from pure white to orange scarlet, with all varying and intermediate shades, some of them being beautifully veined and striped. All of them do well, and flower finely when bedded out during the summer season. They are also very popular plants for the window-garden on account of their healthfulness, their cleanly habit, freedom from insect pests, and their constant flowering.

The Abutilons are easily cultivated, doing well in a compost of two-thirds well-rotted sods, and one-third well-decayed manure. They require a temperature of 48° to 56°, a light, sunny situation, and a liberal supply of water.

When grown for the window-garden, young plants should be obtained early in May, placed in four-inch pots, and then plunged in a sunny situation; turning the pots occasionally during the summer, and watering if necessary. About the first of September take them up and repot into eight or nine inch pots, according to the size of the plants, taking care to drain them well. When potted, water freely, and place in a shaded situation until cool weather sets in, when they should be brought inside.

When grown for the greenhouse a more liberal treatment should be given; they should be potted as well as shifted into larger-sized pots. And while for the window-garden young plants should be procured every season, for the greenhouse old plants will do as well, if they are well cut back early in May, and treated as advised for young plants.

Of the many beautiful varieties the following are the most desirable: *Duc de Malakoff*, especially the variegated form, with leaves blotched and mottled with white and golden yellow. *August Rossold*, large foliage, beautifully blotched with green, yellow, and creamy white. *Darwini tesselatum*, a very beautiful variegated variety, and moreover very free flowering. *Boule de neige*, pure white flowers. *Darwini*, orange scarlet-veined pink. *John Thorpe*, bright yellow. *Santana*, brownish crimson. *Roseflorum*, beautiful rose-colored flowers. *Blood Red*, blood red with dark veins; and *Joseph Hill*, with large, orange-crimson flowers.

A. Mesopotamicum and *A. M. variegatum* are very distinct varieties of drooping or trailing growth, the flowers of both being yellow and scarlet. They require a more liberal treatment, and should be planted out in a rich, deep border during the summer season. When taken up, they may be trained to the sides of the window-garden, or on a low, circular trellis. They may also be placed in rustic baskets and suspended from the rafters of the greenhouse. Grafted or inarched on strong, erect growing varieties, they will, with a little care and attention, form excellent decorative plants for the greenhouse or conservatory.

CHAS. E. PARNELL.

ABUTILONS.

WINDOW BOXES OF FLOWERS.

Of home decorations nothing is so pleasing to the eye, and gives so refined and home-like an appearance to a house, as well arranged outside window boxes; and country residents who imagine them adapted to city houses only deprive themselves of a great means of enjoyment. The season for preparing and planting window boxes is near at hand, and how easily they may be managed is pointedly and instructively shown by a correspondent of the *New-York Tribune*, who relates his experience as follows:

The boxes were made of pine, three feet in length, one foot in width and nine inches deep. To simulate panels a piece of molding was put around the edges of the sides and the ends. The supports were iron brackets screwed to the house, the horizontal part just long enough to hold the boxes, which were closely fitted under the window sills. Both boxes and brackets were painted like the body of the house — an olive drab — so that the latter were inconspicuous when not occupied.

The boxes were filled with well-enriched sandy loam, with a sprinkling of charcoal and guano, and planted with strong, healthy plants the latter part of May. For bloom I depended mostly upon Geraniums, having some of the best varieties known to florists, and I placed lengthwise of each box three or four large plants, filling in smaller ones in front and in the rear, together with the finest varieties of Coleus and Achyranthes, and plants also with small delicate foliage. In front a large silver-leaved Geranium occupied the center of one box, a white Centaurea the other. Shades of rose color and lake predominated in one, mixed with blue Lobelia and blue Ipomœa.

For trailers, masses of *Othonna crassifolia* served me, with many seedlings of Thunbergia raised in a hotbed. The latter gave an abundance of pure white flowers, and of deep orange and buff. *Pilogyne suavis* was also utilized, and it had a wonderful growth, often sweeping the ground or running from box to box. The Geraniums outdid themselves. They were young, stocky and eager to display their beauty — great rosy clusters appeared here and there, vieing with the scarlet or crimson sorts, which were very handsome in their emerald setting.

Not only were the plants disposed to advantage in front, but I was still more anxious to make the back side such as to gratify the eye within the room, for at these windows we had our easy chairs, and did our sewing and reading, and the close proximity of the plants gave us much satisfaction. It is always pleasant to look up from your book or your work to rest the eye on something agreeable — a picture, a row of flowers, or a corner of the room with artistic arrangements, so this bit of gardening with its gorgeous coloring so near was truly charming.

The abounding vitality, the tender shading of color and highly decorative effect are not easily forgotten, and compelled admiration from those who were determined not to be satisfied.

It was said:

"You wont like the boxes." "They will be a failure." "The plants will burn up with glass for a background." "You can't use your blinds to darken the room, and when the hot weather and the flies come you will wish your boxes elsewhere." Finally, "You had better leave window boxes for city people."

It was ungracious in me not to heed these criticisms, but as I did not I can now confidently commend the plan to all who desire to make their surroundings attractive. It is a great saving of labor, as the boxes can be watered from within, and with thick shades and wire screens we scarcely missed the use of window blinds.

Doubtless the idea originated in the city where there was not ground for flower beds, but there is no reason why it should be confined there, for it furnishes a rare opportunity to embellish the country home.

REVIVING CUT FLOWERS.

Hot water will generally revive flowers that have wilted from having been cut for some time. Place the lower part of the stems in nearly boiling hot water until the petals become smoothed out, then cut off the part that has been in the hot water, and put the flowers in luke warm water and keep in a cool room. White flowers are apt to turn yellowish and do not respond to this treatment as readily as colored ones.

Lawn and Landscape.

EVERGREENS.

A lawn or yard does not seem complete without a few Evergreens. They are a constant source of satisfaction. In summer they blend harmoniously with the season's favorites, and in autumn they form a beautiful background, setting out to advantage the frost-tinted leaves. In winter they wonderfully relieve the eye from the dreary monotony which reigns about. From under their protecting boughs peep the first green tints of spring, and they freight the air with their healthful odorousness.

Just at present I am not speaking of those little dwarfed and stunted specimens, so very fashionable at present. I have in my mind now those generous Pines, Balsams, and Firs that used to form a snug little grove along the north side of our yard, from the roadway back beyond the buildings. They had been set many years before, with some regard to regularity; but afterward they were allowed to grow in their own gorgeous way, and they were the pride of our old homestead. My fondness for Nature's own handiwork in the shaping of Evergreens was, no doubt, induced and strengthened by this early association.

During the last few years I have had occasion to handle many young Evergreens, transplanting and shipping away. I do not now recollect of ever losing one in transplanting at home. This is partly owing, no doubt, to congenial soil and short distance of removal. Yet, if I could have the handling of them from the time they were taken from their wild haunts until they were placed where they were to stay, I would not be afraid to guarantee their success in less favorable localities. Others may have just as good methods, but they can have no better success.

As to the season for transplanting, either fall or spring is good. The *when* is not so important as the *how*. I lean a little toward the spring planting, however, as the ground is then more moist, and no other vegetation in the way about the roots and stems to obstruct the work of taking up the young trees.

My first and main precaution is to secure the body of mold immediately around the tree that contains most of the feeding roots in a tree of small growth. I have this lifted out carefully with the tree in the center, as little disturbed as possible, and then wrap coarse sacking about the whole, drawing it up around the trunk and tying firmly. In this shape they can be loaded into a wagon-box that has a thick layer of straw in the bottom, and taken home. They should be set out at once, watered and staked. The reader will understand that this way of taking up can only be practiced on short distances, where the trees can be taken home and set out in a few hours at the most. If they are to be shipped, the mold must be detached, and moss worked in among the roots and bound around them. Even here I hold to the idea of wrapping coarse sacking around the whole, and fastening around the stem. The whole mass is then moistened, after which treatment they will stand quite a journey and come out in good condition.

If the planter finds that the roots are at all dried up when he comes to set them out, the tree may as well be pitched into the brush-heap at once, for it will sooner or later find its way there. Never use manure of any kind around the roots of a young evergreen tree. Vegetable mold is good, but they do not need a rich soil. They should always be staked firmly, for they offer a thick top to the wind, and if twisted about, the roots cannot get a hold.

W. D. Beynton.

TENNIS LAWNS.

The first thing in the making of fresh lawns is to fix on a suitable site, which, if possible, should be so chosen as not to be shut in too much with shrubs and trees, although shrubs are desirable to a certain extent to secure privacy, and trees for partial shade — a great boon on bright days. The trees should therefore be on the south side, and the shrubs where they will shut in the ground from public view; but it is very important that they be not sufficiently near for the balls to be driven among them, as then they have to be continually hunted up. This labor may, to some extent, be obviated by the use of nets; but the better way by far is either to have a sunken court or raised banks, the latter being preferable, especially if the position happens to be at all wet and low. In this case the ground should be drained by running a row or two of tiles through it.

The draining done, the next thing is to level, making the ground uniformly firm and solid. If the soil is found at all to be stiff and close, it is a good plan to use plenty of sand or road scrapings at top, or in lieu of these fine cinder ashes, either of which will prevent the surface from becoming very hard and cracking in dry weather, or sloppy and muddy in wet. As soon as it is leveled and dressed as described, it will be ready for turfing or sowing; if turfs can be had, they are best, as there is then a good bottom at once.

To have fine herbage on the sods they must be obtained from a meadow or pasture that has been closely grazed; they should be cut about nine inches or one foot wide, three feet long, and three inches thick, sizes handy for laying down. When this is done, it will be necessary to ram any projecting or high parts down, and then make all smooth by aid of a heavy roller. This should be plied from time to time during the spring, always taking advantage of any rain or thaw after a frost, as soon as the surface is soft and in a condition to be affected by pressure.

In the event of turf being difficult to procure, a good lawn may be soon had by sowing seed. The preparation requisite for this is just the same as that for turf. The best kind of seed for sowing to form fine courts or lawns is that which consists of a mixture of lawn grasses and small clover. The seed may be sown as soon as the ground can be brought into proper condition; it then germinates quickly, and is soon out of the way of birds. When up, gentle rolling is all that is necessary till the grass gets along. Then the mowing machine must be put to work, but the grass should not be cut close till it becomes well established, when the machine ought to pass over it regularly once every week all through the summer and autumn. This will cause it to spread and thicken from the roots like a carpet, elastic and pleasant to tread on.—*S. D., in London Garden.*

THE LAWN BORDER.

By the term *border*, says *Mr. Geo. Ellwanger*, are meant the outlines of the lawn proper, or such margin as may be devoted to trees and shrubs of the ornamental type. This may be of greater or less dimensions, according to the size of the place. In an average-sized ground a good width would be about twelve to fourteen feet. The lawn, of course, requires its trees; here one for shade, there one for protection, and there still another to produce a desired effect in landscape expression. But trees and shrubs on the lawn should be dealt out with a sparing hand, especially when the space accorded to the turf is limited.

A lawn can never present a complete and finished appearance without its border of trees and shrubs. Indeed, the lawn border is as important a factor in the artistic treatment of one's home surroundings as the lawn itself.

The border will naturally be laid out with sufficient variety in its curves and outlines, and will inclose the lawn entirely or in part, as may be considered most desirable. In planting, the larger trees will be placed in the back-ground, followed with the smaller trees and shrubs in proper graduation. A few groups of deciduous shrubs well arranged, where the space is ample, produce a fine effect, the more so when set off by a back-ground of evergreens. If the approach to the house will admit, a few of the larger trees should be planted on the south side of the entrance and house, for the benefit of their shade, such as Scarlet and Double Horse Chestnut, Linden, Birch, Elm, Norway and Cut-leaved Maple.

Judicious planting after the ground has been well prepared by sub-soil plowing, enriching, grading and draining if necessary, will greatly enhance the value of a place, to say nothing of the enjoyment that would recur to the owner, and be shared by his family and friends.

To trees we are not only indebted for grateful shade in summer, but especially for protection from cold in winter. Protection by evergreen screens in exposed situations would add much to the comfort of man and beast.

HARDINESS OF RETINOSPORAS.

Referring to some remarks by Mr. W. Barry in a former number of The American Garden, our correspondent P. J. writes us from Halifax, Nova Scotia: "*Retinospora plumosa-aurea* may not be hardy at Rochester, but it is quite hardy here and stands 20° below zero; so does *R. plumosa*, of which I have one about seven feet high. *R. pisifera* is also hardy here; I have one about eight feet in height. Strange to say, another about ten feet from this one was cut down to about a foot from the ground the winter before last, whereas the other was not in the least touched. I do not quite understand the cause." [Survival of the fittest.—Ed.]

"Some years ago, when in Boston, I visited the establishment of Mr. Hovey, and when talking with him about various Conifers he said many people injure their trees by taking too much care and protecting them with Spruce boughs. I had been in the habit of doing so, and found every spring the trees cut back. Since then I have not covered at all and find they do much better."

Foreign Gardening.

GINSENG CULTURE IN JAPAN.

Ginseng *(Panax quinquefolium)* is a herbaceous plant growing wild in rocky or mountainous woods, especially in the Alleghanies and in the Upper Lake regions. The stem is round, smooth, a foot high, bearing at its summit a whorl of three compound leaves and a single umbel on a central peduncle. The flowers are small, yellowish, the berries bright red. The root is large, four to nine inches long, spindle-shaped, often forked, whitish, thick and fleshy; and this is the valuable part of the plant.

In China and Japan it is highly prized as a medicine, being the most expensive as well as most relied upon remedy for almost every ill human flesh is heir to, although with us its remedial virtues are not recognized. The exports from this country amount to about half a million pounds annually at a value of nearly a million dollars.

We have received several inquiries as to the practicability of its successful and profitable culture here, but cannot learn that it is cultivated anywhere in this country, and should be much pleased to receive any information from those of our readers who may have some knowledge about this subject. The spontaneous growth of Ginseng is getting scarcer with every year, so that it may be well to attempt its cultivation, which, if it prove successful, will no doubt yield a good profit.

A correspondent of the Agricultural Department who has recently traveled in Japan states that the plant is largely cultivated there, and the following description given by him may be of interest to those who may attempt its culture here.

The Japanese select for the culture of the Ginseng, black, mucky, and low, wet soil as the only kind in which it will attain perfection and become white; if grown in ferrugineous soil it becomes reddish, and is less valuable. The ground after being well prepared and manured is laid out in beds, always running east and west. To shelter the plants from the direct rays of the sun and from heavy rain storms each bed is protected by a roof made of straw and laid upon poles supported by posts. In Southern Japan, in the provinces of Idzumo and Hoki, the planting takes place in November, and farther north in April.

The seed is deposited two to three inches apart each way. The plant is of very slow growth, and takes three to four years to attain its maturity. The flower buds start from the base of the leaves, but unless seeds are desired these are pinched off. The seeds, after being gathered, are buried in the ground, one to two feet deep, to preserve their germinating powers.

The harvest takes place in July and August of the fourth year. The roots are cylindrical in shape, about as thick as a finger, white and often prong-shaped toward the lower end. In the fresh state they weigh about twenty to twenty-five grains, but occasionally double that amount. After digging cut the roots they are freed from all dirt adhering to them and then carefully washed, after which they are scalded in boiling water or steam, so as to make them appear yellowish brown, when the cross-insertion is made. They are then laid on shelves, and, according to size, exposed for from two to eight days to a heat averaging 100° to 120° C, after which they are perfectly dry and fit for market. They may also be successfully dried in the sun.

When ready for market the root is yellow or brown, semi-transparent, brittle, and of bitter-sweet taste, and must be guarded against dampness. Of the stem and leaves is prepared a jelly, which in taste reminds one somewhat of licorice, with the addition of some bitterness. This is never exported.

GRAPE-GROWING IN SICILY.

The Grape is rapidly taking the place of the Olive and Sumac on the Island of Sicily. According to the report of the French Consul at Palermo, the annual production of wine amounts already to from one hundred and ten to one hundred and thirty millions of gallons, with every prospect of considerable increase in the future. The brand best known here is *Marsala*, but many others of reputed quality are produced there, and known as *Zucco*, *Corvo*, *Moscato*, *Albaneto Marcarello*, *Aromena*, etc.

Horticultural Societies.

NEW-YORK HORTICULTURAL SOCIETY.

Roses and Orchids formed the leading and most attractive feature of the April exhibition, and it would be superfluous to state that their beauty and excellence were highly commented upon. All the leading varieties of the Roses of the season were represented: Niphetos, Maréchal Robert, Perle des Jardins, Souvenir de Wm. Wood, La France, Bon Silene, Souvenir d'un Ami, Douglass, Chas. Rovolli, Cornelia Cook, Catharine Mermet, Gloire de Dijon, etc. A huge bunch of Mabel Morrison attracted considerable attention; this is a sport of Baroness Rothschild, equal in all its merits, but is pure white, slightly tinged with pink. Mad. Cusin, of a very peculiar violet-rose, tinged with yellow, is improving with each exhibition. Mr. Otto Andrea showed a very fine hybrid-perpetual seedling, raised by him and named Queen of Queens.

A collection of cut flowers from Mr. Geo. Such was of unusual merit, and contained more choice species and varieties than we have ever seen in similar exhibits. Among them were: *Anthurium Schertzerianum*, several species of Amaryllis, Ixoras, *Statice Halfordi*, Passifloras, Azaleas, several rare Orchids, etc.

Hallock & Thorpe exhibited a fine specimen of *Streptosolen Jamesoni*, a description of which was given in our January number.

Another interesting and attractive exhibit was a collection of a dozen or more named varieties of Persian Lilacs from John Henderson.

Tulips, Hyacinths, Lilies of the Valley, Pansies, Carnations, Geraniums, Cinerarias, Primroses, Violets, Calceolarias, and many other plants and flowers were shown by various exhibitors, both amateur and professional.

PRIVATE FLOWER EXHIBITIONS.

The great competition in the flower trade during the past winter has stimulated the New York florists to unusual exertions, resulting in a series of special flower shows. In fact, the windows and stores of our leading florists present continuous flower shows during the spring months.

The largest and best of these was that of Mr. C. F. Klunder, 907 Broadway. All the plants and flowers were of remarkable excellence, and the arrangement was highly artistic and tasteful. A large circular group of Standard Roses was a magnificent sight, but it would be difficult to single out the best where all are of superior merit. There were groups of Lilies, Hyacinths, Cyclamens, Cinerarias, Persian Lilacs, and of scores of other plants, a remarkably fine specimen of *Gardenia florida*, two large well-shaped *Laurus nobilis*. Of Orchids, although in not very large numbers, there were some superb specimens of *Dendrobium nobile*, *fimbriatum oculatum*, *thyrsiflorum*, *odontoglossum grande*, and *macrophyllum*.

As most of our fashionable florists have their specialties in certain flowers and styles of arranging bouquets and designs, special and private flower exhibitions will, no doubt, be among the permanent features of this city.

MASSACHUSETTS HORTICULTURAL SOCIETY.

Capt. John B. Moore, chairman of the committee appointed by the society, recommends the following as the best Hardy Roses for outdoor culture:

CONTINUOUS BLOOMING ROSES.

Alfred Colomb, Annie Wood, Boieldieu, Caroline de Sansal, Fisher Holmes, François Michelon, Gen. Jacqueminot, Marie Baumann, Mme. Victor Verdier, Mons. E. Y. Teas, Pierre Notting, Rev. J. B. M. Camm, Xavier Olibo, *Charles Darwin, *Countess of Oxford, *Dr. Sewell, *Marguerite de St. Amande, *President Thiers. The last five (marked with stars) are fine, constant bloomers, but liable to mildew.

HARDY ROSES FOR GENERAL CULTIVATION.

Alfred Colomb, Anna de Diesbach, Annie Wood, Baron de Boustetten, Baroness Rothschild, Charles Lefebvre, Duke of Edinburgh, Étienne Levet, Fisher Holmes, François Michelon, Gen. Jacqueminot, John Hopper, Jules Margottin, La Rosière, Marie Baumann, Marquise de Castellane, Maurice Bernardin, Mme. Gabriel Luizet, Mme. Hippolyte Jamain, Mme. Victor Verdier, Mons. Boncenne, Mons. E. Y. Teas, Paul Neyron, Rev. J. B. M. Camm, Thomas Mills, *Louis Van Houtte, *Mlle. Marie Rady, *Pierre Notting. The last three (marked with stars) are difficult and uncertain, but so remarkably fine that the committee could not refrain from mentioning them.

COTTON CENTENNIAL EXPOSITION.

The special Premium List of the Horticultural Department of the World's Exposition has just been issued. It is certainly the most complete and extensive schedule of the kind we have ever seen, comprising every branch of Pomology, Arboriculture, Floriculture, etc.; and the premiums to be awarded are most liberal. The pamphlets may be obtained from the superintendent, Mr. Parker Earl, Cobden, Ills.

OUR BOOK TABLE.

New Jersey State Horticultural Society.—Proceedings of its ninth annual meeting which, as usual, are full of interesting information. The pamphlet contains, in addition to the papers mentioned below, President Ward's address, and many other highly valuable papers and essays.

E. Williams, *Hybridizing and Cross-breeding.*—A Paper, read before the New Jersey State Horticultural Society. The author gives here plain, common-sense explanations of the meaning of and difference between hybrids and crosses, practical instructions for their production, and valuable suggestions of how to improve our Grapes and other fruits.

J. T. Lovett, Fruit List of the State of New Jersey, reprinted in pamphlet form, from the author's report of the State Horticultural Society. A carefully prepared list of all the principal varieties of fruits cultivated in the State, grouped according to seasons and arranged by geographical sections, so that any one can see at a glance which varieties, for market or home use, succeed best in his county. This is a most valuable contribution to the pomological literature of the State, the imitation of which by every State Horticultural Society in the Union is highly to be recommended.

Western New-York Horticultural Society.—Proceedings of its twenty-ninth annual meeting, held at Rochester. The Reports of this Society, which numbers among its members many of the most experienced and distinguished pomologists and horticulturists of the country, are always looked forward to with interest, as we are always sure to find in them a rich store of valuable matter. Among the many good papers contained in the present volume are President Barry's address, the reports of the committees of the different sections, county committees, and essays by Dr. Sturtevant, Professor Caldwell, John J. Thomas, P. Reynolds, Joseph Harris and others.

The Scientific American.—This excellent weekly journal is not, as might be supposed from its name, devoted to strictly scientific matters only, but presents in a clear, practical manner, the entire progress and development of our age. Science, art, literature, mechanics, industrial interests, inventions and discoveries of every kind, natural history, agriculture, horticulture, and many other topics of interest to every intelligent person, receive proper attention. As an exponent of American Progress it stands unrivaled; and, combined with a high moral tone throughout, its educational value as a family paper cannot well be overestimated. We are glad to perceive its marked popularity and success, which have compelled the publishers to remove to more spacious quarters. The new offices are at No. 361 Broadway, corner Franklin street; they are beautifully lighted, airy apartments, more than fifty feet wide and one hundred and sixty feet long, and furnished with everything needful for the prompt and efficient execution of business.

CATALOGUES RECEIVED.

Ellwanger & Barry, *Rochester, N. Y.*—Supplementary List of Novelties and Specialties. Also Descriptive Catalogue of Select Roses, with brief practical directions for planting, etc.

Matthew Crawford, *Cuyahoga Falls, O.*—Catalogue of Strawberries and other small fruits. A very neat and tasteful little pamphlet, giving cultural directions, and concise and truthful descriptions of all the best new and old varieties.

Parson & Sons Company, *Flushing, N. Y.*—Descriptive Catalogue of Hardy Ornamental Trees, Flowering Shrubs and Vines. Special attention is directed to their magnificent collections of Rhododendrons, Roses, Magnolias, Chinese and Ghent Azaleas, Camellias, Japanese Maples, and other rare and choice plants.

Gardener B. Weeks, *Syracuse, N. Y.*—Illustrated and Descriptive Price List of Grappling Hay Forks and Railway Hay Conveyors. This apparatus took the highest award at the trial of N. Y. State Agricultural Society, and for excellence of workmanship and construction, as well as for ease and efficiency of work, is not excelled by any other.

E. D. Sturtevant, *Bordentown, N. J.*—Catalogue of Water Lilies, Greenhouse and Bedding Plants. This is a most interesting pamphlet, giving descriptive and cultural directions of all the choicest and rarest aquatic plants in cultivation, together with several illustrations. This is the only establishment in the country which makes a specialty of these plants.

Zimmerman Fruit Dryer or Evaporator.—*Zimmerman Mfg. Co., Cincinnati, O., and Burlington, Iowa.*—Catalogue of their various drying apparatuses, with many valuable instructions and directions for evaporating, bleaching, conserving, crystallizing and marketing of fruits. The Zimmerman Evaporator is made of galvanized iron, is portable, fire-proof, and covered by nine patents.

Boomer & Boschert, *Syracuse, N. Y.*—Illustrated Catalogue and Price List of the Cider and Wine Presses, and other Machinery manufactured by the Company. With one of these presses, it will be recollected, one hundred barrels of cider were made in ten hours, at the Centennial Exhibition at Philadelphia. We have frequently seen these presses in use, and cannot conceive of anything more complete and better adapted for the purpose.

ANSWERS TO CORRESPONDENTS.

Late Strawberries.—*G. B. W., New Bedford, Mass.*—James Vick, Kentucky, Mount Vernon are among the best late varieties. "On moist, rich ground" we should try Golden Defiance, and if good care can be given, Jersey Queen.

Stephanotis and Anthurium.—*H. C. W., Saxton's River, Vt.*—Unless wanted for forcing, Stephanotis can be wintered in a temperature of from 45° to 50°, and will bloom only the better for it. Of course, when kept in so low a temperature, but little water should be given. For fuller directions see March number.

Anthurium Scherzerianum requires strong heat and a treatment similar to that given to tropical Orchids.

Lilium Harrisii in the House.—*M. W., Quaker Hill, N. Y.*—This as well as all other Lilies that have been forced during winter should, after blooming, be transferred to the open ground. The place in which they are planted must be well drained, naturally or artificially, else the bulbs are very apt to rot. They will not bloom again before another year.

Lilies from Seed.—*G. F. S., Hennepin, Ill.*—The easiest and usual way of propagating Lilies is by offsets, or scales, but they can also be grown from seed. This should be sown as soon as ripe, in frames or boxes where it can be protected from severe frost. Most of the seeds will not come up until the second season. When the bulblets have attained sufficient size—after about two years—they have to be transplanted singly, and treated the same as small offsets.

Grape Cuttings have to be planted as early in spring as possible, before the buds commence to start.

White Climbing Roses.—*S. D. P., Walnut Hill, Mass.*—There are several varieties of *white* climbing Roses, *Benett's Seedling*, one of the Ayrshire class, is one of the best; it has medium-sized, very double, pure white flowers. They are not quite as hardy as the Prairie Roses, but with light protection stand our severest winters very well. There are also white *Banksia* Roses. The flowers are small, but of a delicious fragrance resembling that of the Violet more than the Rose. This class is not hardy at the North.

Bulbs Not Blooming.—*Several Inquirers.*—Without a knowledge of all the attending circumstances it is impossible to tell why bulbs refuse to bloom. The most frequent cause of failure is that they are kept too wet and too warm from the start. All plants, when not in vigorous growth, should be watered only sparingly. Then, bulbs need an annual rest after flowering, or after the completion of their growth; unless this is given by drying them off, partially at least, they cannot recuperate sufficiently to produce flowers. The culture of Amaryllis, Gloxinias, and Achimenes was described in previous numbers, and will be treated of again as soon as feasible.

Pruning Melons and Tomatoes.—*D. C. A., Monroe, N. C.*—All the good that *pruning* of Musk and Water-melons does is that they bear a little earlier. The process consists in pinching off the vines at the third joint from the root as soon as they have made sufficient growth. They will then form side shoots, which may be pinched in again. The *pruning* of Tomatoes consists in topping the leading shoot. This is said to promote earliness, but we have never seen much benefit result from the operation, and consider it hardly worth the trouble.

Teasel.—*A. R., Vineland, N. J.*—Teasel, *Dipsacus fullonum*, is a hardy biennial plant, the dried flower-heads of which are used in the manufacture of cloth. As far as we are aware it is only cultivated in a few towns in western New-York. It requires good, well-drained ground. The seed is sown in the latter part of April or beginning of May, in drills about three feet apart, and covered lightly. Six quarts of seed is sufficient for an acre of ground. The young plants are of slow growth, and have to be kept free from weeds, and thinned out to about six inches; when large enough, horse cultivators may be used for keeping the ground clean. The second season the flower stalks appear, growing to a height of from four to eight feet. They commence blossoming about the middle of July, and the earliest ones become fit for cutting by the first of August, the whole crop requiring about a month for harvesting.

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(From the Baltimore Daily News.)

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N. *Helianthus multiflorus, fl. plen.* Golden Sunflower.—A hardy perennial plant of great beauty, grows about four feet high and bears a profusion of rich golden-yellow flowers of the size of Dahlias.

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P. *"Curiosity,"* a new early flowering *Pompon Chrysanthemum*, with brilliant, deep-bright crimson flowers tipped with golden yellow. This choice variety just introduced here is not for sale, but is offered only as a prescut to our subscribers.

Q. *Clematis coccinea* (Scarlet Clematis).—One of the most desirable climbers for covering verandas, trellises, arbors, screens, etc., as it grows from eight to ten feet in one season. Its coral-red flowers are produced in great profusion.

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T. *Amaryllis Treatei*, the Fairy Lily.—A delicate, pure-white flower, two to three inches in diameter, borne on slender stems 5 to 6 inches high. Suitable for the garden or house.

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What Others Say. Attention is invited to the Border of the first page of the Premium List giving a few of the multitude of similar *voluntary* expressions, coming from those who are and have been its readers for years past. The Editors and Publishers pledge themselves to make THE AMERICAN GARDEN **increasingly valuable** by their most earnest efforts, by additional assistance, and by Liberal Outlay for *Illustrations*, gathering information, etc., etc.

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Miscellaneous.

BOSTON'S TRADE IN MAY-FLOWERS.

An annual Boston industry that is not very much heard of, but which has developed in the last few years to large proportions, is the sale of May-flowers, or Trailing Arbutus. These sweet-scented blossoms arrive in the city the latter part of March or the first of April, the supply coming at first from Plymouth and the towns in its vicinity. As the season advances, the supply gradually comes from further north, until, in May, New Hampshire and Vermont are the main reliance of the trade.

It is estimated that, last year, from twenty thousand to twenty-five thousand bunches were sold in Boston. One man, who keeps a flower-store in a "hole-in-the-wall" on Temple place, was the originator of the business in the city, ten or a dozen years ago, and his trade has gone on increasing, till last year, when he sold about twelve thousand bunches, mostly by retail. The bunches bring, delivered in Boston, from ten to twenty cents each, according to scarcity and demand, retailing for from twelve to thirty-five cents.

The Arbutus will retain its fragrance and freshness longer than most other flowers, but needs to be packed in wet moss, or in such a way that the stems may be kept moist, to be of full value for market. Although so many were sold last year, the demand kept ahead of the supply, and many more might have been sold had they been obtainable. Here is a hint for some of the bright boys and girls in the hill towns who wish an addition to their pocket-money.—*New England Homestead.*

EUROPE'S GREAT ESTATES.

The largest landed estates in Great Britain, with the one exception of the property of the Duke of Sutherland in Scotland, are exceeded in size by the largest landed estates in Germany and Austria. The Duke's estate has no equal in Germany, but in Austro-Hungary is exceeded by that of Prince Schwartzenberg, who owns fully 120 square miles. Prince J. Liechtenstein owns 104 square miles; Prince Esterhazy, 80; Count Schonborn, 60; while a number of other estates are of nearly equal extent. The largest landed estate in Germany is that of the Duke of Arenberg, a Belgian subject. Of the large native owners, Princes Thurn and Taxis head the list with 55 German square miles (15 German are equal to 70 English square miles); the Duke of Brunswick, 50; Prince Fürstenberg, 50; Prince Salm-Salm, 40; Duke of Tallyrand, 35; Prince Pless, 30; Prince Leiningen, 29; four more have 25 German square miles each. Thus there are 22 land-owners in Germany and Austria with estates far larger in point of area than those of British nobles.

INVESTING MONEY.

The first thing a city man does when he becomes rich, says the *Philadelphia News*, is to buy a farm, move into the country, and bankrupt himself trying to raise enough to keep him from starving. A rich countryman, on the other hand, buys a brown-stone front in the city, and becomes interested in stocks with a like result.

REQUIREMENTS OF COUNTRY HOUSES

To sum up the requirements of an isolated, healthful house in the country, says President *Henry E. Pellew*, in his excellent address before the Bedford Farmers' Club, the site should be well and carefully located; it should be dry and properly drained, with walls impervious to dampness from the outside. It should have a good cellar and an unfailing and easily accessible supply of pure drinking-water. The chimneys and fire-places should be large and open when possible, and the sanitary arrangements should be simple, convenient, and not conspicuous to eye or nose; also, all windows should be made to open as readily from the top as from the bottom.

Outside there are some few things which deserve notice—for instance, shade trees, however desirable, should not be too close to the house, nor interfere with its ventilation or supply of sunshine. The high-growing forest trees—Elms, Oaks, etc.—are far better than the low-growing ones, with their dense shade, which retain and give out dampness. The Italians have a proverb with much truth in it, "Where the sun does not enter, the doctor does." Children, in particular, need plenty of sunshine in the living-rooms as well as out-of-doors, and instances are frequent where their health has been injured by too much shade.

NOTICES OF THE PRESS.

THE AMERICAN GARDEN, a monthly illustrated journal, devoted to the gardening interests of America, is a first-class paper in every respect.—*Evangelical Messenger.*

THE AMERICAN GARDEN comes out with a cover which is quite tasty, both in color and design and a decided improvement on its previous appearance, although the GARDEN was always a handsome paper. Each department contains seasonable hints on the work or preparation necessary to running a farm, garden, or orchard. Those who have not seen it can hardly form an idea of the great amount of valuable information each number contains, and should send for a sample copy.—*Bath Daily Times.*

FRIENDLY WORDS.

THE AMERICAN GARDEN continues its high rank as the best of all the agricultural and horticultural papers published.—*S. E. G., Corry, Pa.*

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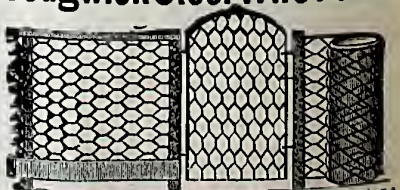

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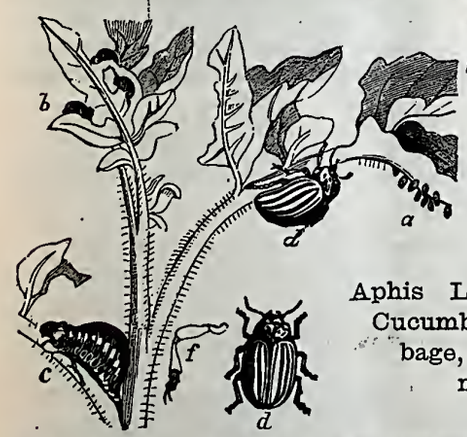

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Aphis Lice, Worms, Caterpillars, and the Striped Bug upon Melons, Cucumbers, Squash and all insects injurious to Grape Vines, Cabbage, Tobacco, Cotton, or Egg Plants, Currants, Fruit or Ornamental Trees, Rose Bushes, and all Shrubs, Greenhouse, and Hardy Flowering Plants.

SLUG SHOT was prepared at first solely to destroy the Potato Bug in gardens, but its valuable properties for the destruction of all kinds of insects, caterpillars, and other vermin, have induced the inventors to manufacture it on a large scale, by which it is offered at a reduced price (as cheap or cheaper than Paris Green), and always of uniform strength, and ready for immediate use without the trouble of mixing.

SLUG SHOT contains, in minutest quantity, **POISON!** destructive to all insect life, which is most thoroughly diffused through natural and chemical fertilizers, and kills the bug in all stages of its growth. The insect eats it in the minutest quantity, and then appears to become paralyzed, often *dying on the leaf without falling to the ground.*

It is an impalpable powder, and *does not harm vegetation;* on the other hand, it is a manure. *Dust it on the plants plentifully,* either by hand or with a dusting-tin. You can easily make a duster by taking an old fruit can, perforating the bottom, and nailing the can to a stick.

QUANTITY TO AN ACRE.

When plants are small, about 20 pounds are needed; or, *take a handful and throw it over each hill, covering the leaves.* It does no harm to plants, but, on the contrary, invigorates them greatly.

The color and odor of **SLUG SHOT** prevent it in any way being mistaken or used for wrong purposes, and its composition is such that it is out of the question for a human being or quadruped to take enough to do any harm. Mr. Hammond, *the originator,* and his men *have worked days and weeks in it without any ill effects whatever.*

Pamphlets, giving a full description, with directions for use and certificates from those who have used it for the various purposes for which it is recommended, mailed free to all applicants.

SLUG SHOT is in strong, neat packages, properly labeled, weighing respectively 5, 10, and 15 pounds each. Those packages are packed in barrels for the trade. The barrels will hold from 200 to 215 pounds net. Each barrel has a large poster and 100 circulars.

The price is a half cent less per pound when ordered in bulk than it is in packages. Prices, in packages, 5 lbs. 30 cents; 10 lbs. 50 cents; 15 lbs. 75 cents; in barrels in bulk, 4½ cents per pound. Slug Shot cannot be sent by mail.

Prices to the trade given upon application.

Manufactured by B. HAMMOND & CO. Mt. Kisco Paint Works, Mt. Kisco, N. Y.

B. K. BLISS & SONS, Wholesale Agents,
34 Barclay Street, New-York City.

WILBOR'S COMPOUND OF

PURE COD LIVER OIL AND LIME.

To Consumptives.—Many have been happy to give their testimony in favor of the use of "*Wilbor's Pure Cod Liver Oil and Lime.*" Experience has proved it to be a valuable remedy for Consumption, Asthma, Diphtheria, and all diseases of the Throat and Lungs. Manufactured only by A. B. WILBOR, Chemist, Boston. Sold by all druggists.

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CLOD CRUSHER AND LEVELER.

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$15,000 FOR SALE, FLORAL ESTABLISHMENT in a South-western town of 50,000 inhabitants. Hitching Boiler, 3 Hot Air Flues, Halliday Windmill, &c. Well-established and large trade. Sales—1881, $3,600; 1882, $6,200; 1883, $5,900. Good reasons for selling. Terms, half cash; rest on liberal time to practical business gardener. Correspondence solicited. Address W. W. W., care of Geo. P. Rowell & Co., 10 Spruce Street, New-York City.

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Undisputed Positive Evidence of Absolute Cures.

IT WILL CURE where others fail, Splints, Ring-bones, &c.	IT LEADS ALL the world, and is highly endorsed

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History of the Horse, with testimonials, Sent Free on Application.	A Fair Trial will convince every one. Send address on a postal.

We only ask a fair trial for Ellis's Spavin Cure. We prepare Condition Powders and Hoof Ointment, Heave Powders, Worm Powder, and Colic Powders. All these on sale at Drug Stores and Harness Dealers. Price of Ellis's Spavin Cure, $1 per bottle.

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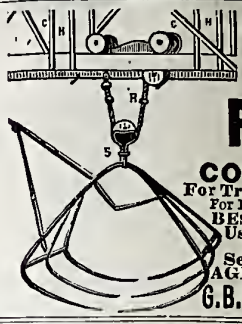

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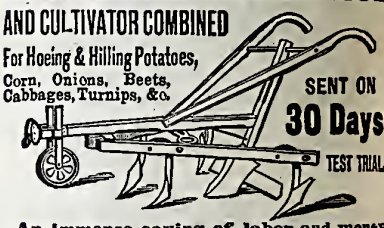

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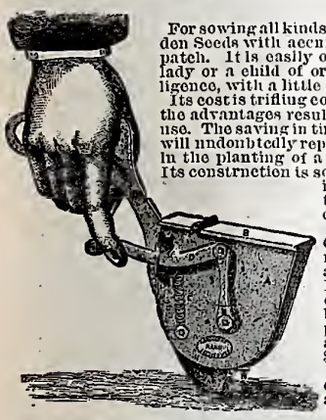
AWARDED A FIRST-CLASS CERTIFICATE BY THE NEW-YORK HORTICULTURAL SOCIETY IN THE SPRING OF 1883.

Our previous efforts to improve this ever-popular flower, although attended with unprecedented success, are eclipsed by a new strain, BLISS'S PERFECTION, that we now have the pleasure of introducing, believing it to be the nearest to perfection of anything yet offered. In the colored frontispiece of our Hand-book, our artist has attempted to reproduce some of the types of this strain; but, beautiful as are these illustrations, we assure you that the originals far surpass them, and the copies, instead of being exaggerations, convey but a faint idea of the perfection of form and exquisite delicacy of shading in the flowers themselves. For variety of markings, beauty of form, large size, good substance, and splendid satiny texture, BLISS'S PERFECTION PANSY is unexcelled.

Per packet (50 seeds), 50 cents; 5 packets for $2.00.

Bliss's Illustrated Potato Catalogue.—Contains a list of 500 varieties of Potatoes, embracing new and very promising varieties, with explicit directions for culture, and much other valuable information respecting this indispensable esculent. 10 cents.

Randolph's Hand Seed-Sower.



For sowing all kinds of small Garden Seeds with accuracy and dispatch. It is easily operated by a lady or a child of ordinary intelligence, with a little practice.

Its cost is trifling compared with the advantages resulting from its use. The saving in time and seeds will undoubtedly repay the outlay in the planting of a single week. Its construction is so simple, that it is not liable to get out of order.

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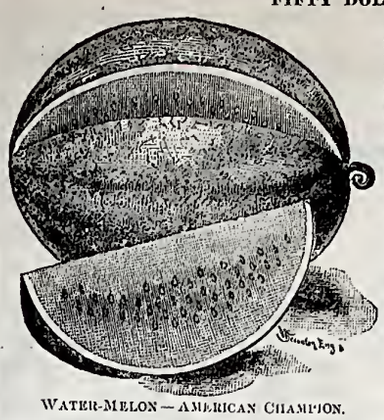
A NEW WATER-MELON—AMERICAN CHAMPION.

FIFTY DOLLARS IN PREMIUMS.



WATER-MELON—AMERICAN CHAMPION.

With this superb new Water-melon we take pleasure in introducing to the public a variety which, we are confident, possesses qualities far superior to any kind hitherto cultivated.

It is a cross between **Rattle-snake** and **Scaly-bark Melons**, both renowned for their excellence. In general character it partakes somewhat of the features of each, but excels in all the most desirable qualities of a first-class Melon for market as well as home use. The skin is dark-green, delicately marbled with lighter shades; shape slightly oval; size large and remarkably uniform, varying from 25 to 50 pounds, although selected specimens reach a much greater weight; the crop holds out well in size up to the last pickings; rind very thin, yet so remarkably firm and tenacious that it bears transportation without breakage and injury; flesh tender, melting, and of unsurpassed quality in every respect, retaining its freshness and sweetness longer after picking than any known kind. The vines are of extraordinary vigor and astonishingly productive.

To test its market value, last summer, some of these Melons were sent to leading Melon dealers in the principal cities in different parts of the country, and although at the time the markets were overstocked with other varieties, these sold readily at from $5.00 to $10.00 per hundred more than current prices. The following are some of the comments of the parties who sold them:

"They created more commotion in the market than was ever known in the Melon trade."

"In shipping quality they surpass all varieties known in the market."

"They carry splendidly; the specks, rots, and breaks are much below the average."

"In keeping quality there is no other kind to approach it."

"Although the market was very dull, these were engaged several days ahead, at advanced prices."

After hearing these indorsements from men who are first authorities in the fruit trade, it will be evident to every one that no other variety combines so many valuable qualities as the **American Champion.**

Price, 25 cents per packet; 5 packets for $1.00.

FIFTY DOLLARS IN PREMIUMS,

To be awarded as follows:—$25.00 to the grower of the largest **American Champion Water-melon**; $15.00 to the grower of the second largest; and $10.00 to the grower of the third largest. All reports, which must be signed by three witnesses and sworn to before a Justice, to be sent us by October 15th, 1884, and on November 1st the cash will be forwarded to those entitled to it. We reserve the right of ordering the prize-winning Melons shipped to us, for exhibition, expenses of transit to be defrayed by us.

BLISS'S AMERICAN WONDER PEA.

The Earliest Dwarf Wrinkled Pea in Cultivation.

Extra early—requires no bushing—exquisite flavor. The best variety for forcing under glass, and the best for early sowing in the garden. This splendid variety is the result of a cross between the *Champion of England* and *Little Gem*, and combines all the good qualities of both of its parents, with the additional ones of superiority in flavor to the Champion and of greater productiveness than the Little Gem. Peas are ready for the table in thirty-three days from date of planting. Thirty to forty pods have been counted on some vines, and nine large peas in some of the pods, and every pod is well filled. The vine grows from eight to ten inches high, according to the soil and season.

After a more extended trial than any previous introduction was ever subjected to, **Bliss's American Wonder Pea** has been pronounced by press and public the most desirable wrinkled variety in cultivation, while, in point of quality, the best horticultural judges in the world maintain that it is surpassed by no other variety.

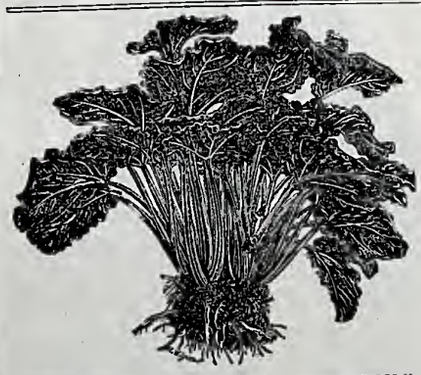
CAUTION.—Each succeeding season the necessity becomes greater of cautioning the public against spurious American Wonder peas. We have on different occasions secured several packets from dealers who claimed to supply the genuine BLISS'S AMERICAN WONDER PEA, which, upon trial, proved to be entirely unlike it. We are within the mark when we say hundreds of bushels other than the genuine variety have been sold. As there seems to be no protection from such fraud, it is to your interest to procure a supply from head-quarters; for unless you obtain the GENUINE **Bliss's American Wonder,** you will never know why it is that, wherever grown, it has been pronounced by all the earliest, the most productive, and best-flavored variety in cultivation.

Per pkt., 10 cents; pint, 40; quart, 75, by mail, post-paid. When delivered at our store or sent by express at purchaser's expense: pint, 30 cents; quart, 50; peck, $2.50; bushel, $8.00. Prices for larger quantities on application.

Voluntary Testimony in favor of Bliss's American Wonder Pea.

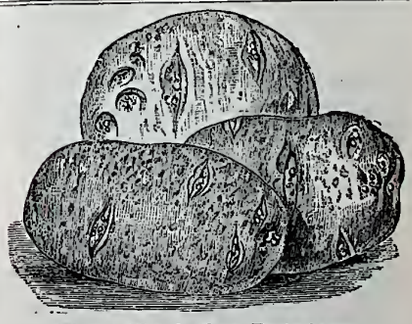
From **Rev. Henry Ward Beecher.**—"Your peas are wonderful, none others so good. I do not mean to plant another year any others, early or late. They beat the Alpha in earliness, and out of sight in flavor."

From **Hon. Marshall P. Wilder,** *Pres. American Pomological Society, Ex-Pres. U. S. Agricultural Society.*—"My AMERICAN WONDER *is a wonder*, equal in sweetness and richness to the Champion of England, which is all that could be desired."



NEW EARLY RHUBARB—"PARAGON."

This variety, although now offered for the first time in this country, has had extensive trial in England, and has more than verified the claims made for it. It is unquestionably one of the finest varieties of Rhubarb ever offered, being the earliest of all and wonderfully prolific. The crowns and stalks are produced in such profusion that more than twice the weight can be gathered from "PARAGON" than from any other sort. It has also the qualification over all others that IT NEVER SEEDS, a claim that we have tested and found well sustained last Summer. The leaves are remarkably small, while in color the stalks are a beautiful bright red, and in flavor unsurpassed. Price, strong plants, 75 cents each; $7.50 per dozen.



New Varieties Potatoes.

Tremont, Mayflower, Iroquois, Charter Oak, Dakota Red.

Choice Varieties of 1883, etc.

Rosy Morn, Rubicund, Early Sunrise, Tyrian Purple, Garfield, Rural Blush.

For description and price of the above, send for our Illustrated Potato Catalogue, 48 pages, which contains an illustrated list of the leading varieties in cultivation, with much useful information upon their culture. Mailed to all applicants inclosing 10 cents. Regular customers free.

For further description of above and other Novelties, see our HAND-BOOK FOR THE FARM AND GARDEN (mailed for 6 cents to cover postage).

Purchasers ordering seeds to value of $5.00 in one order, will be entitled to a copy of THE AMERICAN GARDEN for one year.

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We now offer for the first time a very valuable new variety. Circular giving full description and price, together with a handsome colored plate, free. Address, ELLWANGER & BARRY, Mount Hope Nurseries, Rochester, N. Y.
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Rooted Cuttings in great numbers, and the varieties most profitable for the trade in Cut Flowers, now ready. Send for a circular. The usual large stock of florets of this popular flower and Smilax is also offered.
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99,999 PEACH TREES All *best varieties* of new and old Strawberries, Currants, Grapes, Raspberries, etc.
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EARLY CLUSTER
New Blackberry, early, hardy, good. Single hill yielded 13 quarts at one picking. Send for free Catalogue.
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Fruit and Ornamental Trees, Shrubs and Vines.
Price Lists Free.
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ROSES

By mail, post-paid. 4 for 50c., 12 for $1. Safe arrival and full satisfaction guaranteed. Directions for culture with all orders. Catalogue FREE. Order now.
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We have still splendid collections of
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SINGLE and DOUBLE DAHLIAS,
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And the most effective BEDDING PLANTS,
In large quantities and splendid condition for immediate effect.
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Stock First-Class. Free Catalogues. GEO. S. JOSSELYN, Fredonia, N. Y

Hardy Plants and Bulbs.

For the finest and most complete collections of the above, see our New Descriptive Catalogue, which will be issued early this year. All the New as well as Best Old varieties will be found in it. Very complete collections of Lilies, Irises, Clematis, etc.; *Lilium Harrisii, Tenuifolium, Auratum, etc.; Clematis Jackmani*, and C. coccinea, "Scarlet Clematis," *Viola pedata bicolor*, "Pansy Violet," New Phloxes, "Porcupine Plant," Hardy Gladiolus, Ferns and Grasses. Special low rates to large purchasers and dealers. Catalogue will be mailed free as soon as published, to all who apply for it.
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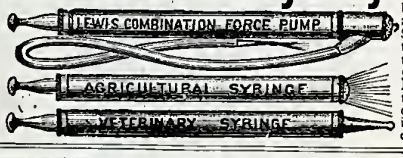
The largest, best, and most productive Early Blackberry, 3½ inches around, from Seed of selected
WILSON'S EARLY.
KIEFFER HYBRID PEAR TREES,
100,000 PEACH TREES,
Strawberries, Raspberries, Grapes, etc. Catalogue with COLORED PLATES, FREE.
WM. PARRY, Parry Post-office, N. J.

Attention! Everybody.



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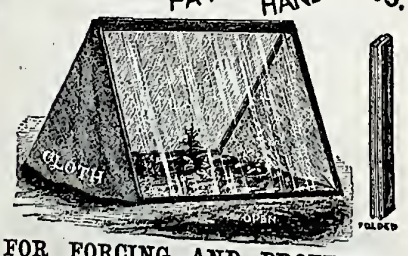

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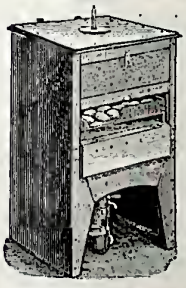

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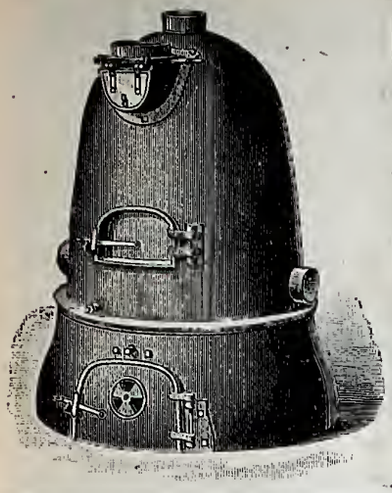

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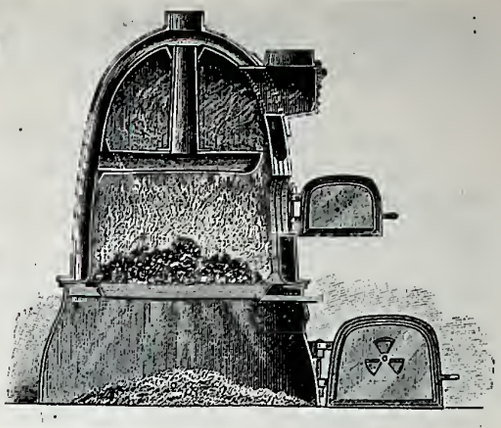

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May 5th, 1884. *Daniel F. Beatty*

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"With your Cauliflower Manure I have good success. My yield this year on one and a quarter acres was 249 barrels.

"For oats I used two bags 'A' Brand per acre, and they yielded eighty bushels per acre. The man that thrashed them says they were the heaviest-filled oats he ever thrashed.

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"Parsnips: With 600 lbs. per acre of 'A' Brand alone, gave about 500 bushels per acre. Sweet corn and cabbage were both good crops.

"I have used your fertilizers for several years, and am perfectly satisfied with the results."

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This large elegant knife (like cut), 75 cts.; one a little smaller and lighter, 50 cts.; a fine 2-Blade Jack-Knife, brass lined, 60 cts.; 3-Blade Heavy Knife, $1.00. Boy's 1-Blade, 25 cts.; 2-Blade, 35 cts. Gent's fine 3-Blade, Ivory Handle, $1.00; Pearl Handle, $1.25.

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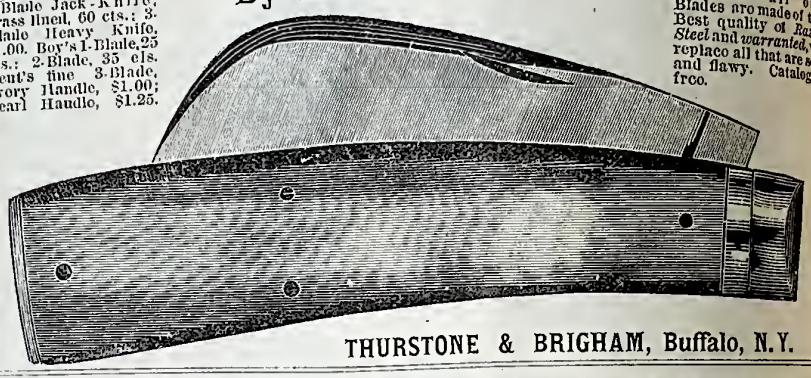

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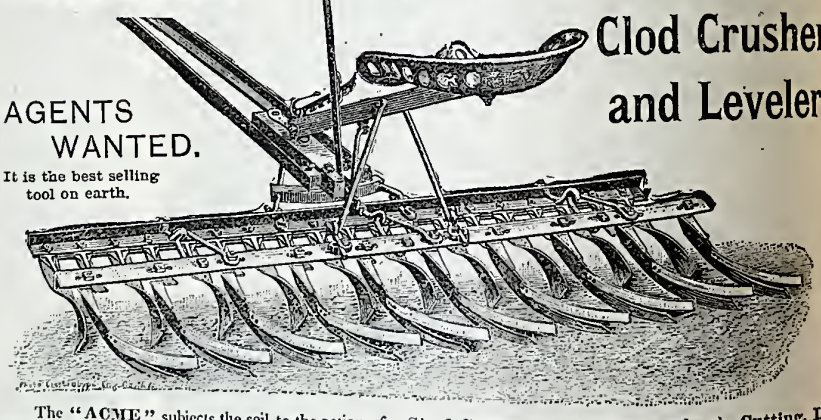

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We make a variety of Sizes working from 4 to 15 Feet Wide.

DO NOT BE DECEIVED. Don't let your dealer palm off a base imitation or some inferior tool on you under the assurance that it is something better, but **SATISFY YOURSELF BY ORDERING AN "ACME" ON TRIAL.** We will send the *double gang* Acme to any responsible farmer in the United States on trial, and if it does not suit, you may send it back, we paying return freight charges. We don't ask for pay until you have tried it on your own farm

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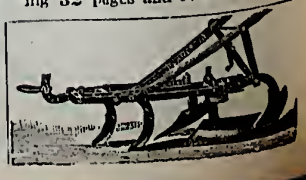

The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, JUNE, 1884. No. 6.

THE MONTH OF ROSES.

Rose and Strawberry exhibitions are the order of the month in many of our large cities, and great are the expectations of enthusiastic competitors who, for a year or more, have made preparations for the occasion and assiduously nursed and petted their fondlings which shall bring them honor and prizes. The beneficial influences of these flower-shows in educating and refining taste are readily perceived, but it is a mistake to confine them to our cities, for nowhere are they more needed and will they be productive of more salutary results than in the country.

The isolation and seclusion of American country life are to many a serious counterbalance of its enjoyments and pleasures, and not unfrequently are they the cause for exchanging a beautiful rural home, surrounded with ennobling and healthgiving influences, for the social advantages of a confining city residence. And there is nothing very surprising in this, for however city-weary one may be, and how much one may be able to enjoy the charms of solitude and the companionship with Nature, man is, nevertheless, a social being, and, even among the most charming natural surroundings, needs, for the completeness of his happiness, contact with his fellow-beings, interchange of thoughts and opinions with persons of similar tastes and inclinations, and the sympathy of congenial friends and neighbors. Monotony and loneliness, however, are not necessary adjuncts to country life, and, with a little effort, pleasant and agreeable social relations may be formed in almost any not too sparsely settled neighborhood.

We do not know of anything more productive of good feeling and pleasant social pastime among persons not intimately acquainted with each other, than amateur flower and fruit exhibitions, and there is no good reason why every town, or county at least, should not have one or more every year. It is not necessary, in fact, not desirable, to try to imitate large city exhibitions. The aim should be to bring together as many of the floral and pomological products of the neighborhood as possible, for comparison, instruction, and friendly rivalry. However small the beginning may be, if those who undertake it are in earnest, it will soon increase in interest and importance, and become the nucleus and the means for mental benefit, sociability, and the improvement and embellishment of the vicinity. Influential horticultural societies, farmers' clubs, and village improvement associations have grown up from such small beginnings; and now is the time to organize and arrange for a neighborhood Rose and Strawberry Show.

ORIGIN OF THE MOSS ROSE.

(From the German of Thrummacher.)

The angel of the flowers, one day,
Beneath a Rose-tree sleeping lay,—
That spirit to whose charge 'tis given
To bathe young buds in dews from heaven;
Awaking from his light repose,
The angel whispered to the Rose,
"For the sweet shade thou'st given to me,
Ask what thou wilt, 'tis granted thee."

The Rose replied with heightening glow,
"On me another grace bestow."
The angel paused in silent thought,
"What grace was there that flower had not?"
'Twas but a moment, o'er the Rose
A veil of Moss he lightly throws;
And, robed in Nature's simplest weed,
What other flower can this exceed?

FRIENDLY WORDS.

The American Garden improves with every number.—*Mrs. L. S., Fair Haven, O.*

Allow me to congratulate the editor and publishers on the excellence and beauty of The American Garden.—*John E. Russell, Secy. Mass. State Board of Agriculture.*

I take more interest in reading The American Garden than in any of the many similar papers I receive. It is *the* horticultural monthly of America.—*H. G., Highland Park, Ills.*

The American Garden is a superior publication, as might be expected under the editorship of so commonsense and experienced a horticulturalist as Dr. Hexamer.—*J. M., Bedford, N. Y.*

Your paper is as excellent as it is beautiful. I have taken for years several horticultural papers, but for practical everyday work in the garden and greenhouse, The American Garden stands at the head of all. Long may it stand.—*Mrs. M. P., Lynn, Mass.*

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The Vegetable Garden.

SEASONABLE HINTS.

Frequent Tillage is as essential to success in the garden as manure, and in many cases even more so. Successful market gardeners bestow, not seldom, more labor on some crops in a single week than many a farmer gives to his Corn and Potatoes in a whole season.

In this connection it should be borne in mind that with shallow-rooted plants deep cultivation must be avoided. In the field, cultivators and harrows should be used, instead of deep-running plows; and, in the garden, prong-hoes and rakes, instead of hoes.

Shallow Cultivation at short intervals is one of the most efficient means to counterbalance the effects of drought. The coat of loose soil which is thereby spread over the roots serves as an excellent mulch, as effective nearly as a covering of straw. Careful experiments made at the Missouri Agricultural College, in this regard, leave no doubt in this matter, and lead Professor Sanborn to state that "tillage, to conserve moisture, must be shallow, not over two inches in depth, the aim being to get a thin layer of dry surface soil that will act as a non-conductor of moisture between the dry air above and the moist surface below. Hence, deep tillage of surface-rooted crops, like Corn, is an erroneous practice, founded in erroneous views. Plowing out Corn involves too deep tillage in dry weather, but adds to the mischief by severing the roots of Corn needed at such times. Our double-shovel plows work too deeply. Our true policy in drought is frequent and shallow tillage."

Assisting Growing Crops.—It is sometimes observed that in ground well enriched with stable manure at the time of planting, the crops do not make as vigorous growth as might be expected. The principal cause of this is that the fertilizers applied are not yet in an available condition; they are in too crude a state to become absorbed by the fine feeding roots of the plants.

Young plants, as well as young animals, require their food in the most digestible form. You may feed a baby to death with solid food, but if you wish to nourish it, you must give it milk. It is similar with vegetables; a young plant may starve while surrounded with crude, dry manure, while a fraction of it in solution would give nourishment and life. An occasional dose of liquid manure acts like magic upon weak plants.

Hill-side Planting.—In gardens with sloping grounds the rows run frequently parallel with the crest of the hill, so as to make them as level as possible. This plan, although it affords easier cultivation, especially when horses are employed, is very defective in that it subjects the ground to more danger from water than when the rows follow the slope of the hill. In the latter case the water that falls during a heavy shower is distributed and carried down the hill in a great many small channels, while in the other it is held back in the furrows until the ridges become insufficient to hold it back. The entire bulk of water thus accumulated breaks through, rushes down the slope to the serious damage of the crops, washing away the most valuable portions of the soil.

THE GREEN GLOBE ARTICHOKE.

Although the Green Globe Artichoke may be successfully grown in our climate, it is very rarely seen either in our gardens or our markets. In France it is a very popular vegetable, and almost every garden has its Artichoke bed. The plant requires good soil, but demands very little attention after the bed is once started, as it is a perennial, and requires to be replanted but once in five or six years.

The plant is quite peculiar, and is worth growing for its appearance alone. It resembles slightly a much overgrown Bull Thistle, the flower-stalks growing five or six feet tall. The flower-heads are the most important part of the plant, being the part used for food. These are about the size, and somewhat of the appearance of a small Pine-apple. The receptacle, or "bottom," of the flower-head, with the thicker portion of the scales that inclose the flowers, are the parts most used. These are boiled and made into a salad, with vinegar, oil, and salt, or are very often eaten raw as salads. The taste is rather peculiar and delicate, and the dish is prized by many persons.

The Artichoke succeeds best in a deep, rich, rather moist, peaty soil, though almost any rich garden soil will grow it successfully. The plants may be grown from seed by starting them early in the hot-bed; but a better way is to procure suckers from an old bed, and set these out in the place where they are to remain. Old plants throw out suckers from their main root, just below the surface of the ground. These may be removed by cutting them off with a small section of the old root, and if set out, will grow and make fine plants the first season, many of which will form flower-heads. When grown from seed, the varieties do not always come true, and it takes a year longer for the plant to form the flower-heads.

THE GREEN GLOBE ARTICHOKE.

The Artichoke needs no winter protection in the Southern States, but in the latitude of New-York it is necessary to cover the bed with straw or leaves to the depth of six or eight inches. The heart of the plant should not be covered too deeply, or it will cause it to smother. It is best to put the litter around, rather than upon the plants.

The French catalogues name several varieties of Artichoke. Our seedsmen usually offer but the one shown in the illustration.

The leaf-stalks are sometimes tied up as we tie Endive, and earthed up as we treat Celery for blanching. In a month or six weeks the inner leaves are nicely blanched, when they are said to make a very palatable article of food, being used both raw and cooked; blanching, however, is usually practiced only on old plants that are not needed. The leaves are cut off in midsummer, about six inches above the ground, which causes the plants to throw up a growth of young and tender leaves, which are blanched in autumn.

The Artichoke begins to form its heads in the latter part of summer, and continues to do so until frosts. It is said that if the undeveloped flower-heads are cut late in the fall, and their stems placed in moist sand, they will remain fresh and fit for use until January or longer.

"ELM."

POULTRY MANURE.

From my long experience in gardening, I find nothing more essential to success than a plentiful supply of manure. Poultry manure especially is very valuable, but gardeners do not seem to appreciate it sufficiently. It is identical in action with guano, or nearly so, being very rich in ammonia, and therefore a very powerful plant stimulant.

The droppings of hens, turkeys, and geese should be carefully saved and preserved. Do not think that because the quantity is small it is not worth the trouble of collecting. Professor Norton says:

"Three or four hundred pounds of such manure, that has not been exposed to rain or sun, is equal in value to from fourteen to eighteen loads of stable manure."

It should be composted with muck, turf, decayed leaves, or other absorbents, kept dry, stored in barrels, reduced to a powder, and applied in the hill; or it may be used as a top-dressing.

I carefully save all I can in this way, and apply it to all garden vegetables. A handful or two worked in a hill of Tomatoes, Cabbage, Cucumbers, or any vegetables, in fact, will give them such a vigorous start that the effect will be visible throughout the season. Such compost mixed in the soil, even after the Tomato plants are set out, will produce ripe fruit ten days earlier than three times the quantity of any other fertilizer I am acquainted with. Or it may be dissolved in water, in a hogshead, and used for watering the plants. In solution it acts even more powerfully than in the dry state.

THOS. D. BAIRD.

RAISING CAULIFLOWERS.

A correspondent of the *N. Y. Tribune*, who succeeded in raising splendid Cauliflowers last season, gives his method as follows: "I spaded very deeply a deep, rich piece of ground, inclining to moisture, and turned in all the rich old rotted manure I could well use. The plants were set out May 1, after being wintered in cold frames. When the weather became dry, I occasionally poured on each plant a little diluted manure water, so that by late summer the heads began to form, and finer heads I never saw. They headed successively until freezing weather. As soon as the white flower-buds, or crown, showed, the leaves were immediately drawn over them and loosely tied, thus preserving the milk-white color and tender texture. Cauliflowers delight in a deep, rich soil."

TARRAGON.

Artemisia Dracunculus.

A hardy herbaceous, perennial plant, cultivated for its foliage, which has a pleasant, peculiar, aromatic flavor. In Europe the plant has been cultivated for centuries, and with the French it is—under the name *Estragon*—one of the most favored herbs. The peculiar flavor of the French mustard is derived from this herb. Its young shoots are used for flavoring salads, soups, pickles, and dishes of various kinds, as we use Celery or Parsley leaves. Tarragon vinegar, a very convenient article for flavoring salads, is made by placing the fresh leaves in common vinegar for a few days, and then straining the liquid.

Being perfectly hardy, when once planted Tarragon requires no further care than to keep the ground around it clean and loose. It is propagated by division of the roots, and thrives in any good garden soil.

ROSEMARY.

Rosmarinus officinalis.

There was a time when no garden was without its Rosemary, which is one of the oldest plants found in cultivation. It was formerly used for seasoning various dishes, but now is but rarely employed for this purpose. The most valuable part of the plant are its flowers; from these an essential oil is distilled, which forms an important ingredient of Cologne Water and other perfumeries.

The plant is a low-growing, half-hardy, evergreen bush, a native of Southern Europe. It should be planted in a somewhat sheltered position, and receive light winter protection.

BUSH BEANS.

Under this name are included all the low-growing varieties, termed in different catalogues as Dwarf, Snap, String, or Bush Beans. Bush Beans usually produce the best results when grown in a deep, moderately enriched, light soil. Very rich soil has a tendency to cause them to run to vine, to the manifest injury of the crop. They are very sensitive to cold and wet; it is therefore useless to plant them before the weather has become settled and the ground warm. After the first sowing, sow every ten days until the end of August, in order to obtain a succession, in perfection; but it is well to remember that for the first sowings one should choose the warmest and most sheltered situations he has at his command.

Bush Beans should be sown in drills two inches in depth, the drills being at least two feet apart. Drop the Beans three inches apart, and do not cover them more than two inches deep; keep the ground clean and free from weeds at all times by frequent hoeings, but be very careful to hoe only when the vines are perfectly dry, as dirt, or even dust, scattered on the foliage when wet or damp, will cause them to rust, and thus seriously injure the crop. In hoeing draw a little earth to the roots at each time, but be careful not to hill them up very high.

The Wax or Stringless varieties of Bush Beans are fast becoming universal favorites, and deservedly so, for when pure they are the best of the Bean family, being entirely free from strings, tender, and of a beautiful waxy color. Nevertheless, Wax Beans are decidedly objected to by some persons on account of retaining their yellow color when cooked; yet, when properly prepared for the table, they are unequaled by any other vegetable. To those who have not grown Wax Beans I would say, give them a trial this season, and I am confident that you will never regret it.

There are many varieties of Bush Beans enumerated in the catalogues of our seedsmen, but for amateurs, a limited number is most suitable, and the following are about the best:

Early Mohawk.—A valuable variety on account of its hardiness, standing a slight frost

TARRAGON.

without sustaining the least injury, and for this reason is extensively planted for the first crop. The vines are of strong, vigorous growth and very productive, and if the young pods are often gathered, will continue a long time in bearing. The pods are long and flat and, if gathered early, are tender and of good quality.

Early Valentine.—One of our most popular and well-known sorts, and one that will be ready for table use in about six weeks from the time of planting. The vines are of vigorous growth, but the pods are smaller in size, and it is not as productive as the Early

ROSEMARY.

Mohawk. The pods are round and fleshy, and when young of very good quality.

Newington Wonder.—A remarkably productive variety, the vines remaining green longer than those of any other sort. The pods, which are produced in clusters or bunches, are small, but when young are crisp and of good quality. The vines are of dwarf or medium growth, and on this account as well as its productiveness, it is highly prized as the best variety for forcing.

Refugee.—A very popular and well-known sort, the vines being of vigorous growth, hardy and productive, and one that is ready for table use in about seven weeks from the time of planting. Pods thick and fleshy. This variety is considered to be the best for pickling as well as for the later crops.

Royal Dwarf Kidney is one of the best late varieties, and as a shell Bean for winter use it has no superior. The vines are of vigorous growth and remarkably productive. The pods bear some resemblance to the Early Mohawk in shape and size, the Beans when dried being of a pure white and of a kidney shape, from which fact its name is derived.

Black Wax is a great favorite with most persons. The vines are of dwarf but vigorous growth, and are remarkably productive; the round, wax-like, yellowish, transparent pods being thick and fleshy, they may be used as snaps until fully grown, as they are even then perfectly stringless. It is as early as the Early Valentine, being ready for the table in about seven weeks from the time of planting.

Ivory Pod Wax is a variety of recent introduction and one of great merit. The vines are of vigorous growth and remarkably productive. The pods are long, of a transparent white waxy color, and entirely stringless until fully white. As a snap Bean this is superior to all others in tenderness. It is also the very best as a shell Bean for winter use, the Beans being of medium size, oval shape, and of a pure white color.

CHAS. E. PARNELL.

SUMMER RADISHES.

Outside of our large cities and their vicinities this class of Radishes is comparatively little known; yet, to those fond of this piquant relish, they form a valuable link between the early-forcing and the winter varieties. All are larger, somewhat stronger in flavor, and of slower growth than the common kinds, requiring six weeks or more before they become fit for use.

They need rich, mellow, rather sandy soil for their best development, and may be sown in succession at any time from early spring till September. *Yellow Turnip, Golden Yellow Turnip-shaped*, and *Olive-shaped Golden Summer* are the varieties most frequently found in cultivation; but none of these have pleased us so much last summer as the new *Yellow Perfection Radish*. Grown alongside of the varieties named above, it was not only of better quality, but retained its crispness longer than the others, without becoming stringy.

All Summer Radishes should be finely sliced and lightly salted for about half an hour before eating them. This will diminish their pungency considerably.

SUMMER TREATMENT OF ASPARAGUS.

Continuing the cutting of the stalks too late in the season is the most frequent cause of Asparagus beds running out. A good rule to go by is to stop cutting as soon as the Strawberries are ripe. Then the rows should be thoroughly cleared of weeds, the ground well forked over, but not so deep as to touch the roots, and a liberal amount of yard manure worked under lightly. Composted fertilizers are best, but it does not matter much what kind is used, if there is only enough of it, for you cannot hurt Asparagus with too much manure.

The Fruit Garden.

SEASONABLE HINTS.

Propagating Raspberries.—Those who have neglected to make a new plantation or to fill out gaps in spring, may, if they have some old Raspberry bushes on their grounds, still make up for the loss of time, and secure a crop of berries next season. The young sprouts which spring up all around old plants may easily be taken up when they are from four to six inches high, and be transplanted to new beds.

A rainy or cloudy day should be selected for this work, and if the ground is not already wet, it should be thoroughly soaked with water all around the young sprouts. If the soil is very light, it should be firmly packed with the foot, so that a good-sized lump may be taken up without crumbling to pieces. Then, with a sharp spade dig up the stockiest young plants so as to have as much soil adhering as can be carried on the spade, move it to the new location, slide the entire lump in the hole previously dug, fill up with fine earth, and water thoroughly. All the leaves, except the three or four upper ones, should be removed, to lessen evaporation. During the first days following, it is well to shade the plants lightly,—a few leafy branches placed around them answer the purpose completely,—and then mulch the ground with stable litter or any coarse material. With proper care, not a plant in fifty need be lost.

The Apple-tree Borer, which, in its perfect state, is a handsome beetle, nearly an inch long, of light brown color with two dull white stripes lengthwise, makes its appearance during the latter part of this month. The female deposits her eggs under the loose bark of young Apple-trees, near the ground. The young larvæ hatch out in about two weeks, and set themselves at once to work to gnaw through the bark into the tree. They require three years to reach full maturity.

When once in the interior of the tree, the only remedy against them is to find the entrance of their burrows,—which may generally be detected by their castings falling outside on the ground in little heaps like sawdust,—and working a stout wire into the channel. But the time for prevention is now, before the beetles have deposited their eggs.

"Among the preventive measures," says Wm. Saunders in his recent work, "alkaline washes or solutions are probably the most efficient, since experiments have demonstrated that they are repulsive to the insect, and that the beetle will not lay her eggs on trees protected by such washes. Soft-soap, reduced to the consistence of a thick paint by the addition of a strong solution of washing-soda in water, is perhaps as good a formula as can be suggested: this, if applied to the bark of the tree, especially about the base or collar, and also extended upward to the crotches, where the main branches have their origin, will cover the whole surface liable to attack, and, if applied during the morning of a warm day, will dry in a few hours, and form a tenacious coating, not easily dissolved by rain. The soap-solution should be applied early in June, and a second time during the early part of July."

FOR IMMEDIATE BEARING.

The editor of *Fruit Notes* takes exception to that part of our Seasonable Hints for April, in which we caution our readers against the fallacy of planting Raspberries for immediate bearing. He quotes:

"Raspberries bear fruit only on canes of the previous year's growth, which in transplanting have to be cut off, if the success of the plant is desired. The young shoots which will spring up from the roots during the season will bear fruit next year, and no power on earth can make them do so sooner."

Upon this the editor comments thus:

"We can but wonder if the writer of the above over *tried* this latter."

We can assure the editor of *Fruit Notes* that having cultivated from five to ten acres of Raspberries annually for the past twenty years, the writer had some opportunities to *try* this latter, and as the result of these trials he does not hesitate to state that Raspberries—a few unimportant fall-bearing varieties excepted—do not bear fruit on the same season's shoots.

"If you plant a Red Raspberry bush," continues *Fruit Notes*, "you may, if you wish, leave a cane of the previous year's growth, and if you do so, no power on earth can *prevent* its immediate bearing of fruit."

Exactly so, but only to the serious detriment of the vitality and vigor of the plant, and it is for this very reason that we told our readers: "If the success of the plant is desired, the old canes have to be cut off."

These facts are so well established that it seems surprising that any one at all familiar with fruit culture should question their correctness; yet, if any one should want additional testimony, we need only refer to the editorial page of this same number of *Fruit Notes*, on which the editor says:

"Remember to cut off all Raspberry and Blackberry stems close to the ground. It is the new growth from the root only that is of value in newly-set plants."

THINNING FRUITS.

Man, as a general rule, is avaricious. In the pursuit of gain he overtaxes his physical powers, and early death is the result. He plants a tree or bush, excites by stimulating manures its fruiting capacity to the highest degree, and in his eagerness for abundant crops causes weakness and an early death.

Nature perpetuates all fruits by the production of seeds. The maturing of these makes the heaviest drain on the vital energies of the plant. Thinning fruits lessens the number of seeds to be ripened by a tree, and therefore increases its vigor. Judicious thinning improves the quantity, quality, and general appearance.

Peaches should not be allowed to be nearer to each other on the tree than four inches, and will then, as a rule, produce more in quantity than when nearer. Grapes, left to themselves, set many bunches of small size, having many green berries, ripening unevenly; remove the greater part, and you will be rewarded. The tendency of the Bartlett Pear is to over-production. Thin severely while the fruit is quite small. Repeat the same operation when the Pear has made about half of its rapid growth toward maturity. Ripen these with care, and the result will be Bartletts in perfection, and a week or ten days earlier than those picked at the usual time. The lack in size is more than compensated for in quality. Plums, if not attacked by the curculio, must be thinned by hand. Thinning Apples acts beneficially, and has a tendency to promote an annual crop of fruit. Pick part of the crop of Currants from each bush for use while green, and mark the result. Gooseberries, being used generally before ripe, are not as exhausting upon the bushes as other small fruits.

Thinning of fruits is also a great protection against disease of the tree and fruit; it increases the vigor and health of the plant or tree, adding size and color to the fruit, imparting increased flavor, thereby gratifying the palate and pleasing the eye.

The demand for strictly prime fruit is much greater than the supply, and those who produce the best are always sure of obtaining the best prices.

J. B. Rogers.

RAISING COCOA-NUTS.

There is a fair probability that Cocoa-nuts will, ere long, be counted among the staple crops of the United States. An extensive plantation of Cocoa-nut trees has just been started in Dade county, Florida, by Mr. Ezra A. Osborn, an intelligent and well-informed farmer, of Monmouth county, N. J.

The seed Cocoa-nuts were brought from South America. One hundred thousand trees have been set out on a tract of about one thousand acres, at a cost of nearly $40,000, and Mr. Osborn proposes to plant several thousand more next winter. It takes about six years for the trees to begin to yield returns, but it is estimated that in ten years the grove will pay ten per cent. on its valuation.

It is said that Cocoa-nuts can be grown in the United States only on a small extent of sea-coast in Southern Florida, so that the prospects for a very extensive Cocoa-nut yield in this country are small. The Cocoa-nut palm abounds in the East Indies, throughout the tropical islands of the Pacific, and also in the West Indies and South America.

The first operation in Cocoa-nut planting is the formation of a nursery, for which purpose the ripe nuts are placed in squares, containing about four hundred each; these are covered an inch deep with sand, and sea-weed or soft mud from the beach, and watered daily till they germinate. The young plants are set out from twenty to thirty feet apart. A full-grown tree will mature about sixty nuts annually, and continues in bearing for many years.

INFLUENCE OF SOIL ON STRAWBERRIES.

Parker Earle, the well-known fruit grower of Illinois, believes that the soil on which Strawberries grow has much to do with their shipping qualities. His experience teaches him that berries grown on poor, sandy soil will hardly endure shipping one hundred miles, while the same variety of berries on stronger, better land possesses great shipping capability. He also calls attention to the fact that purchasers, as a rule, pay more for berries of attractive appearance than for flavor, an illustration of which is the Monarch, of high flavor but poor color, which is rejected for Wilson or Capt. Jack, both sour but well colored.

APRICOTS.

Midway between Cherries and Peaches ripens one of the most delicious and most beautiful fruits in existence — the Apricot. The tree as well as the fruit resembles the Peach in general appearance, but in quality the fruit is superior and more delicate.

The principal obstacles in the culture of this fruit are that the blossoms appear so early as to become often exposed to spring frosts which prove ruinous to the crop; and that the curculio is so extremely fond of it that it does not leave any for the owner. Yet there is no great difficulty in preventing either. The measures, recommended in our last number, for the protection of Plums will also prove efficacious with Apricots; and to retard the blossoming season it is recommended to plant the trees on the north side of buildings, walls, or shelter-belts. In small gardens they may advantageously be trained in espalier form against houses or trellises, which affords easy means for the protection of the blossoms by throwing matting over them when frosty nights threaten.

The general treatment and pruning of the Apricot is similar to that of the Peach. The shoots should be cut back every season in order to produce new bearing buds.

The *Moorpark*, shown in our illustration, is one of the largest and finest varieties; its skin is yellow with red cheek; flesh, orange, sweet, juicy, and rich, parting readily from the stone; very productive. The best among the many other varieties named in catalogues are: *Breda, Early Golden, Hemskerk, Large Early*, and *Peach*.

MOORPARK APRICOT.

LOW LAND FOR ORCHARDS.

Solomon was sure there was no new thing under the sun, but when the Illinois horticulturists announced that low land was best for Apple orchards, not a few people considered it decidedly novel. Yet, when a large number of our best orchardists aver that low land is best, and thus contradict all received opinions upon the subject, the matter is worthy of investigation.

That in many cases orchards on low land have done best, it is useless to deny. But I am sure this is owing to fertility, and not to location. The fact is, that we starve our orchards. I know of orchards which have not received a bushel of manure in fifteen years, and yet their owners wonder why they do not bear. Land in Apples should be manured more heavily than land in Wheat; but in less than one case in ten is this done. In placing our orchards upon high ground, we have been forced to plant them upon ridges, which are never so fertile as the low ground, because for ages the rains have been carrying fertility from the ridges to the depressions. After the land is brought under cultivation, this process is hastened by the slovenly system of cultivation. As a result, orchards upon high land are in a soil much less fertile than those upon low lands. If the orchardist whose trees are upon the high land will keep it well fertilized, his orchard will do as well, if not better, than that of his neighbor who has planted upon low land. If of equal fertility, high land is better for orchards than low land; but fertile low land is better than sterile high land, and it is this which has led some to suppose that low land is best, unqualified by any conditions of fertility.

I know that in every instance my experience with well surface-drained but not under-drained land has proved that high land is best for an Apple orchard. My observation confirms what experience has taught me. It is true that this is a day of new developments and of new theories. But I cannot believe that all natural conditions have so radically changed as to make, other things equal, low land superior to high, being land for Apple orchards.

It is claimed that orchards on low lands are more productive and longer-lived. If they are more productive upon low land, it is clearly because low land contains in a greater degree the elements of tree growth and nourishment; in other words, greater fertility. If longer-lived upon low lands, it must be because the conditions of the soil and atmosphere there are more favorable to longevity.

If the condition of the air favors longevity, it must be because its temperature is more equable, for it is extremes of temperature which destroy a great many of our trees. That the temperature of the air above low land is more equable appears plausible. As low land will be the moister, the exhalations from it will be greater and the more moisture there will be in the air above it. This condition of the air would retard the radiation of heat from the earth, reducing the extremes of temperature of the soil at all seasons, and keeping it warmer at night in winter, when its temperature is likely to sink to a hurtful point On low land there would always be more surface water, and the freezing of this would protect the trees, for a time at least. But will not this very moisture in low land work more evil than good? Are we to suppose that all the evils attending low, wet land for orchards have

> "Folded their tents like the Arabs,
> And as silently stolen away"?

Really, I believe that the site has very little to do with the orchard. Insects prey upon trees, no matter what their elevation, and diseases attack them anywhere. Good cultivation, good care, and manure will make an orchard of good varieties profitable upon almost any site; while the lack of these will cause failure, no matter where or how the orchard is situated. What little advantage there is in locality is in favor of high land.

JNO. M. STAHL.

THE FRIENDLY MOLE.

That, in grub-infested ground, the mole is only a blessing in disguise can hardly be doubted; and, although we do not urge our readers who do not already have a supply to stock their gardens with moles, the experience of an Indiana fruit-grower is worthy of consideration:

"Last year I put twelve moles in my Strawberry patch of five acres to catch the grubs, and they did the work. I never had a dozen plants injured during the summer, either by the grubs or moles. I know some people do not care for moles on their farms, but I want them in my Strawberry patch."

A SPECIFIC FOR RASPBERRIES.

If there is such a thing as a specific in horticulture, says J. T. Lovett, ground bone is a specific for Raspberries.

The Flower Garden.

JUNE.

Fair girlhood of the year! in which she weaves
More gaudy colors in her simple dresses,
And knots the waxen Lily's buds and leaves
Among the braidings of her glossy tresses;
In whose enjoyment, all the afternoon,
Like lovers at the shrine where love reposes,
We live enraptured—thou art here, O June,
All fragrant with the odor of thy Roses.

Upon the leafy lute-strings of the trees
The zephyr sings its monody of sweetness,
The feathered warblers hearken to the breeze
And trill the echoes of the song's completeness;
The little brooks, whose waters hum a tune
Unto the overhanging reeds and grasses,
Uplift their notes to bid thee welcome, June,
And nod their Lilies as thy footstep passes.

And when at eventide the jealous night
Bids guarding day her tutelage surrender,
What time the golden stars display their light,
The silver moon her most enchanting splendor,
So loth is day to speak the last good-byes
She tarries while the somber night advances,
And lingers on the threshold ere she flies,
To catch the latest of thy wakeful glances.

Back from the sunny Southland in thy train
Return the bobolinks, the jays, and thrushes,
The bluebirds warble in the fields again,
Kingfishers swing above the river rushes;
The shady groves are eloquent with song,
The flowery meads melodious with numbers,
And music walks beside thee all day long,
And lends its charms to beautify thy slumbers.

—*Boston Post.*

SEASONABLE HINTS.

Gladiolus.—Comparatively few persons derive from these superb bulbous plants all the enjoyment they are capable of giving. It is a great mistake to plant one's entire stock of bulbs at once, and consequently have them all come into flower at the same time, and at a season when there is an abundance of bloom in every flower garden. The greatest merit of the Gladiolus—although beautiful at any time—consists in its value as an autumn flower.

The bulbs may be planted as soon as the ground becomes fit to be worked, but to insure continuous bloom, successive plantings should be made at intervals of two weeks, up to the beginning of July. Any good, moderately rich garden soil is suitable for their growth. In heavy soils they should be planted three to four inches deep, and in light and sandy ones from four to six inches.

Tigridias.—We could never fully account for the lack of attention to these beautiful summer-flowering bulbs, as they are of the easiest culture and of as brilliant and striking beauty as anything can be imagined. The bulbs are not as hardy as Gladiolus, and should therefore not be planted before all danger of frost is over. They require a rich, light, and deep soil, and should be planted about two inches deep.

The principal very distinct varieties hitherto known were *T. pavonia*, with bright scarlet flowers, spotted with yellow and brown; and *T. conchiflora*, orange-yellow, spotted with brown. To these is now added a white variety, *T. grandiflora alba*, which may justly be considered one of the most valuable recent introductions. Its flowers are larger than those of the older kinds, almost pure white with crimson spots in the center.

The flowers of all the Tigridias last but little more than half a day, but new ones expand daily in great abundance.

ROSES.

The most beautiful flower of the early summer is the garden Rose, and when in full bloom there is none to dispute its title of Queen of the Flowers. The old-fashioned varieties which bloom only in June, such as the Damask, Provence, Cabbage, Climbing Roses, and Moss Roses, are all hardy, and, if they are well fed, they will never fail to give great satisfaction. But there is much complaint among old gardeners that their Roses do not flourish well. This is owing to two things, or perhaps three.

There is too little sunshine to perfect their beauty—shade-trees and shrubs having overshadowed them—and their peculiar tastes have not been consulted, *i. e.*, the food they require has not been furnished for them in plentiful supplies. Roses will grow upon any soil, to be sure; but, to grow in perfection, the soil must be strong, and highly enriched with well-decayed stable compost, or a suitable commercial fertilizer. The Rose is as gross a feeder as the Pansy, and, if well fed, it will fully repay the care given to it, by its great luxuriance.

Tobacco-stems and refuse tobacco are now considered the best of fertilizers or mulch for a Rose-bed; and they will also aid to destroy the insect pests, which are the third reason for the Rose-blight, of which so much complaint is made. But with air-slacked lime scattered freely over the bushes while wet with the morning dew, the slug can be prevented from skeletonizing the leaves and destroying the buds. Two or three applications will rout an army of slugs, as has been fully proved in many gardens. The white powder detracts somewhat from the beauty of the bushes, but it will soon shake off, and it is more easily applied than any of the washes that are so much extolled. Fly-powder and hellebore will also kill them, and will destroy the Rose-bug; but a vigorous shake of the branches every morning over a basin of hot water is the best antidote for those disgusting crawlers, whose presence will injure all the beauty of both flowers and foliage.

Indeed, "we must fight if we would win" fine Roses, as vigorously as the ancient hymn encourages us to fight to win the highest heavens. But there is nothing worth having in life which can be attained without a struggle, a contest. "E'en that a Rose may live, something must die."

Soot is an excellent antidote against all insect pests, while it will also nourish the roots of the plants. So, if you burn wood, sweep down the soot from the chimney-back, and scatter it over the ground directly under the bushes, and see its results.

Remontants, or Hybrid Perpetual Roses, so called because they "rise again,"—*i. e.*, will bloom again in the autumn *if duly cared for*,—are the most popular variety for the open border. But, to make them true to their name, it is well to cut off at least one-half of their buds, and never to permit seed-pods or haws to form. As soon as a flower begins to droop, cut it off and take a long stem with it, and this pruning process will increase the growth of the flowering stems for the autumn. Cut your Roses with an unsparing hand, and they will reward you with more flowers. Cut out all the old wood of Monthly Roses after the June flowering, and encourage stout shoots from the roots, which will bear the largest and finest Roses.

There is much choice in the selection of free-bloomers among Remontants, but without close pruning and the richest of plant-food you cannot produce fine buds. If the slugs come again in August, put two tablespoonsful of lac sulphur to a gallon of water, and sprinkle it over the leaves, after stirring it well together, and a good dose of barn-yard drainage will not come amiss. It can be applied once a week with great benefit to all Roses. It is not too late to purchase Roses now, especially Tea Roses, which will flower until Christmas if kept in pots of rich compost, made friable by gritty sand, and closely pruned after flowering. Sand is a most desirable addition to the soil of all potted plants.

Without *Moss Roses* no collection of Roses can be complete, as they are indeed the belles of the rose-parterre. The *Cristata*, or Crested Moss Rose, is one of the loveliest of the tribe. It was found many years ago growing in the crevice of a wall at Friburg, in Switzerland, evidently starting from a seed, and it is supposed to be a cross between the old Moss and the Provence Roses, as it has all the characteristics of the Moss, while its full flowers resemble those of the Provence. Its buds are simply perfection, their calyx being divided into a fringe-like crest, clasping and rising above its deep pink petals. For perfect growth a rich, deep soil is needed, and then it will command the admiration of every one.

The monthly, or Remontant Moss Roses, which will flower in the autumn if rightly cared for, should be in every garden of Roses. There are pink and white and crimson varieties, which are all beautiful.

A prominent rosarian of England, who belongs to the clerical persuasion, writes very charmingly upon his favorite flower, and he quotes from a letter of Mr. Sharpe's the following:

"I met Mrs. Siddons at dinner just before the death of her spouse. It was at Sir Walter Scott's, and you cannot imagine how it annoyed me to see Belvidera guzzle boiled beef and mustard, swill porter, take huge pinches of snuff, and laugh till she made the whole room shake."

So did the prima-donna of the stage, and so does the Rose rejoice in strong sustenance, solid and fluid, with occasional pinches of tobacco-powder and *lac sulphuris;* but, as with Mrs. Siddons, they who had dined with her forgot the beef, and the beer, and "the pungent grains of titillating dust," when she appeared in all her power as an artist,—so, when we see the Rose in all her beauty, we forget the midden and the tank. However unsightly to the eye, or unsavory to the nose, they seem to say, like the Earth in the Persian fable:

"I am not the Rose; but cherish me, for we have dwelt together."

When you ask what varieties of Roses shall we grow? the answer must be, "All kinds—single and double, small and large, and in all shapes—bushes, trees, and climbers—for one cannot have too many Roses." But, if you would grow perfect buds and flowers, you must not be too fearful of soiling your fingers, even if it makes them like those of Martin Burney, to whom Charles Lamb said over a rubber of whist:

"Oh, Martin, Martin, if dirt were trumps, what a hand you would hold!"

DAISY EYEBRIGHT.

SALPIGLOSSIS.

Of the large number of beautiful annuals suited for outdoor cultivation, there are none that, when well grown, will produce so striking and attractive an appearance as the different forms of this genus. They are not entirely hardy, and the seed should therefore not be sown in the open ground before the latter part of May or the first of June. As to soil they are not very particular, but they do better on soils that are comparatively light and warm, and ought to be planted where they will not be overshadowed by trees or large shrubs. They do not bloom till late in summer, and must be well thinned out to allow sufficient room for the full expansion of the plants, which, ranging from one to two feet in height, show to best advantage when arranged in clumps of from three to five plants.

A long season of growth is a prime necessity, and those who would have these flowers in their true character and in full bloom for as long a period as possible, must begin earlier in the season, and assist the seedlings during the early stages with a little artificial heat.

There is no better course, says the *Gardener's Magazine*, from which the accompanying illustration is reproduced, than to sow the seed in shallow pans filled with a light, rich mixture, such as would be formed with equal proportions of loam, peat, and leaf-mold. Peat may be dispensed with; in which case loam and leaf-mold should be used in equal quantities. Thin sowing may be strongly advised, as the plants can then be allowed to attain a size suitable for pricking off before they are removed from the pans. For the majorities of gardens, the plants of each variety that can be raised in a twelve or fifteen-inch pan will suffice.

The propagating pit will be the most suitable place for the pans until the seedlings are about half an inch in height; but it is of little consequence where they are placed, provided the temperature is about 70°, and the pans can be placed a short distance of the glass after the seedlings have made their appearance. As a matter of course, the soil must be maintained in a moderately moist state, and the watering be done with a can, to which a fine Rose has been attached, to avoid any displacement of the soil with which the seeds are covered.

Although a rather high temperature has been advised for the first stage, the seedlings should be removed to cooler quarters immediately they are about half an inch in height; the best results being obtained by hardening them somewhat before pricking off. The boxes used for this purpose are prepared in much the same way as the seed-pans. In these the plants are pricked off about two and a half inches apart, and then kept rather close and shaded for a short time, until they are becoming established. They are then gradually hardened off and freely exposed, to promote a stout, compact growth.

When raised in heat, as here advised, the Salpiglossis are naturally more tender than those from seed sown in the open air; and, generally speaking, it will be better to delay planting them out until the ordinary bedders are transferred to their summer quarters.

SALPIGLOSSIS.

SOME SHOWY FLOWERS.

As a general thing, our more delicate flowers — the kinds we would select for a bouquet, or for use in vases and on the table — are not so well adapted for use in large beds in the garden, or on the lawn, where a color-effect is aimed at rather than individual beauty, as some of the following rather coarser flowers:

MIRABILIS, OR FOUR-O'CLOCK.

This is a strong grower, often covering a space three feet square, if given a good soil to spread its roots in. It blooms profusely. Its magenta, violet, white, and striped flowers are quite as attractive as some varieties of Petunias, which they considerably resemble in shape. It makes a good summer hedge if the plants are set about two feet apart. It can very easily be raised from seed planted in the open ground in May.

ESCHSCHOLTZIA, OR CALIFORNIA POPPY.

A very showy flower, not a very robust grower, rarely being seen more than a foot in height. Its foliage is finely cut and very pretty, and serves as an excellent background or ground-work on which to show off the bright yellow and orange flowers, which are in shape very much like a small single Poppy. It is a good summer bloomer, and a bed of it is a brilliant sight in July and August.

THE MARIGOLD.

This is another old flower, which, sooner or later, will be "in style" again, I venture to predict. If the Sunflower can be popularized, I see no reason why this flower should not. It is quite as brilliant and can be used with much better effect. Like the Four-o'clock, it makes a good low hedge against which other flowers can be shown off to good advantage, especially scarlet ones. The French varieties are not such strong growers as the Africans, but are better bloomers. The foliage is pretty, being somewhat fern-like, and has a strong pungent odor that is not at all disagreeable. The striped varieties, yellow and brown, are velvety in the intensity of their color, and are really beautiful flowers. The large double ones are not as desirable as the small single ones. These flowers are very effective in large beds when used with scarlet Geraniums. They can also be made effective when grown with white Phlox.

R. E. E.

ROUGH ON FLOWERS.

A correspondent from Washington County, Utah, writes: "Our winters are so severe and long that but few flowers can be grown here. We are not free from frosts until near the middle of June, and they return again the end of August. What little summer we have is very hot, and nothing can be grown without watering."

The Window Garden
AND GREENHOUSE.

THE PRIZE FLOWER.

[The prize for window-gardening was won, some time ago, by a poor man living in an attic where the sun shone but a few minutes every day, when he would hold his flower up and turn it round while the sunshine lasted.]

It was high noon; and through the dusty streets
A worn, stooped form among the busy throng
Wended his way. A little flower he bore
Within his arm, and when he reached the place
Where they had bid him come, he laid it down
Amongst the rest; he standing near to wait.
Flowers of the richest hues, sweet-scented ones,
And those of dazzling splendor, were there, too.
His eye scarce moved to them, whate'er they were;
Shy, silent, and unnoticing, he stood
As guardian of his own bright, peerless one;
For it had been the sweetest thing to him
In his lone life, and as it grew he watched
The velvet petals opening from the buds,
As a mother would the features of her child.
Its sweet, delicious fragrance was to him
As grateful love; it was a thing divine,
So exquisitely wrought! and when he felt
Oppressed by anxious care, 'twould softly breathe
Sweet words from Holy Writ—"And shall He not
Clothe you much more?" and soothed his heart to rest.
At length his name was called, but he remained
Absorb'd in thought, and heaven had those thoughts;
And when one came and said to him, "Your flower
Has gained the prize," he knew not what was said;
But when he know, his eye grew bright; tears coursed
The aged cheeks for very joy of heart.
And there was pride, not for himself, nor all
His care; but such we feel when noble things
Are done by those we love!

—*London Golden Hours.*

WATERING PLANTS IN POTS.

Some people attempt to keep pot plants without giving them any water at all; the result is familiar to every one. Usually, however, the earth in the pot or box is kept soaked, and very much in the condition of an ordinary swamp. We have ourselves seen dead evergreens pulled out of boxes full of mud. *Neuste Erfindungen* gives utterance to the following timely remarks:

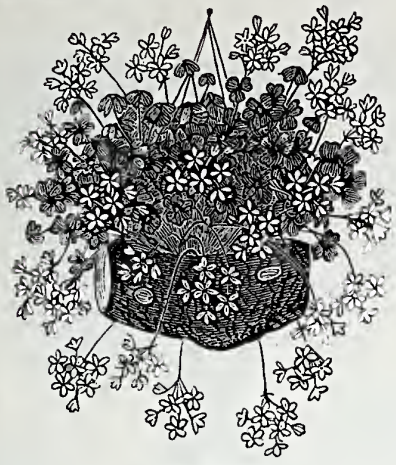
"Watering plants is one of the most important things in the culture of house-plants, and very special care should be devoted to it. Plants ought not to be watered until they need it. It will be evident that they require wetting if, on taking the earth from the pot it crumbles to pieces like dust; a sure sign is to knock on the side of the pot, near the middle, with the finger-knuckle. If it gives forth a hollow ring, the plant needs water; if there is a dull sound, there is still moisture enough to sustain the plant. Plants must not be wet more than once or twice a day; on dry, clear days they require more water than on damp, cloudy days. On the other hand, the earth must not be allowed to dry out entirely, for that is also very injurious.

"In wetting them, the water must be poured on in such a way that it will run out again through the hole in the bottom of the pot. If the earth gets too dry, it is best to place the pot in water, so that the water will saturate the soil very gradually."

BASKET PLANTS.

OXALIS.

If I were obliged to confine myself to one plant for a hanging-basket, that plant would be the Oxalis. It has pretty foliage, which is produced in great profusion. The leaves are borne on long and slender stems which droop over the basket gracefully and almost hide it. The flowers are borne well above the foliage and are charming little things. I like the pink-flowered variety best. It blooms more profusely than any other variety I have ever grown. This plant requires very little care. Give it a good soil to grow in,



OXALIS BASKET.

and plenty of water, and it will be sure to please you. It does not insist on having sunlight, but it will do better with some than it will without any, being brighter in color, and flowering more freely. The only insect that I have ever found on my Oxalis is the red spider, and a daily use of the syringe for a week has routed him.

TRADESCANTIA.

The variegated Tradescantia is a very pretty hanging-plant. I have a basket of it in which the variegation is very unique.

TRADESCANTIA MULTICOLOR.

Some branches are entirely white; others will have a few green leaves, while some have nothing but striped leaves. If any green branches appear, I cut them off at once. This plant will grow well in a soil so poor that other plants would starve to death in it, if you will give it plenty of water. I do not like it as well when grown in rich soil; the joints between the leaves are longer, and the growth is too rampant. To make it throw out a large number of branches, pinch the ends off close to the pot. Keep at this persistently until the surface of the soil is covered with young shoots, then let them grow. It does not seem to care at all for direct sunlight.

MADEIRA VINE.

For large baskets I have found the Madeira Vine very satisfactory. I do not give it a rich soil, and in consequence its growth is not so strong; but the leaves will be closer together and more attractive than when it has a rich soil to grow in. I pinch it back pitilessly until the basket is covered with foliage. After that I let a few vines grow, allowing some to droop, and others I train up along the chains suspending the basket. Keep the glossy leaves clean and you will have a charming plant by treating it in this way.

E. E. Rexford.

SOIL FOR POT PLANTS.

One reads so much in certain periodicals about the importance of having this or that kind of soil for different plants, that the amateur is quite sure to get the idea that to grow plants well requires skill in selecting the proper soil for them to grow in. I used to think so, and often went to a good deal of trouble to secure such a soil as was recommended for a particular plant. But one day I received some new plants, and as I had none of the soil recommended as necessary for them, and could not secure any, I potted them in the same compost used for Geraniums, and other plants of that character—a mixture of turfy loam, garden mold, well-rotted manure, and sharp sand, in the proportion of one-third of loam, one-third garden soil, and the other third made up of the manure and sand. For strong-rooted plants I add less sand than for those having many small roots. In all cases I had sand enough to keep the soil from becoming heavy. The result was that these plants made as fine and healthy a growth as I cared to see. I began to think then that perhaps it was not necessary to go to so much trouble in procuring different soils for different plants as I had supposed, and after experience convinced me that most plants will do well in almost any good soil. It is astonishing how readily plants accommodate themselves to circumstances widely different from those in their natural state.

Some plants, like the Fuchsia, prefer leaf-mold, and will do better in it than in anything else I have ever tried; but I grow fine plants in exactly the same soil that I give my Geraniums. It is my practice to mix the turfy loam—which I procure from under old sods in the pasture—the garden mold and the manure—which I get in corners of the barn-yard—well together, and add the sand as I pot my plants, putting in more or less as I consider it advisable.

I find that most amateurs do not seem to consider it necessary to pay much attention to the item of sand. But it is. I would sooner omit the manure, if I had to choose between the two. If you use plenty of sand the soil will never become heavy and compact, and quite likely sour. The sand keeps it light and porous, and the water runs out readily, thus making it almost impossible to drown out the plant by over-watering, and the air can penetrate to the roots easily. Make up such a compost as I use and you can grow good plants in it every time.

* *

GESNERACEOUS PLANTS.

ACHIMENES.

A beautiful genus of plants, the various species of which are natives of Central America and Jamaica. Many varieties are now in cultivation, all beautiful, exhibiting a great variety of colors — crimson, scarlet, white, pink, and orange, and the different shades arising from a combination of these. The flowers are produced from the axils of the leaves in great abundance.

They are propagated by cuttings and by the scaly underground tubers with which they are furnished. Early in spring, place

ACHIMENES.

the small tubers in pans or pots, provided with good drainage and light, rich soil, composed mostly of leaf-mold and sand. Cover slightly with similar material, and place where they can get a good bottom-heat. When well started, and the shoots have grown about two inches high, transplant about three inches apart in other pans, pots, or baskets. A basket made of wire in a globular form, lined with moss and filled with soil, recommended above, mixed with a liberal addition of thoroughly rotten manure, in which the young plants are placed all around, using the different colors, is one of the prettiest objects one could imagine. It will soon become a complete mass of flowers, lasting during the summer and autumn months.

Better success is generally obtained by transplanting the plants than by shifting into larger pots or pans. Pans about five inches in depth are more suitable for the growth of this class of plants than pots. If the latter are used, fill them about half full with potsherds for drainage. Unless the water is allowed to pass freely from the roots, the leaves are liable to rust, which affection arises often, also, from syringing overhead too often. When the plants are making their most luxuriant growth, keep well supplied with water at the roots, and with a warm, moist atmosphere, but do not syringe overhead. They require to be shaded from the strong rays of the sun, and it is principally from neglecting to give sufficient shade that many persons fail to grow Achimenes successfully.

When the plants commence flowering, remove to a cooler place, but do not allow strong draughts to rush against the plants, as they are very impatient in such a position. After the season of blooming, gradually withhold water until the tops are completely decayed, then place the pots containing the tubers in some place where they shall be free from all water, and have a moderate temperature until ready for starting in the spring. The tubers keep better in the pots in which they were growing during summer than if taken out and placed in sand or any other material.

There are a great many varieties of Achimenes, the result of crossings of *A. coccinea*, producing small scarlet flowers, with *A. longiflora* having large flowers. The strongest and most easily cultivated kinds are those nearest the *longiflora* type.

GESNERA.

In the beauty of their flowers, not less than in their singularly marked, soft, velvety foliage, are the different varieties of Gesnera valuable. If treated properly, they may be had in flower during the winter months; in fact, with a fair supply of plants, their beauty may be enjoyed during the entire season by starting them into growth at different periods. Soil similar to what is recommended for Achimenes is suitable for them. Plenty of water at the roots during the time of their vigorous growth is indispensable. They must not, however, be syringed, as this destroys the foliage. The plants, in order to produce good results afterwards, must be well cared for after flowering, as on the proper maturing of the tubers depends their future success. They are propagated by division of the tubers and by cuttings.

GLOXINIA.

A house filled with the different kinds of Gloxinia is a sight to be remembered. Their finely marked, campanulate-shaped flowers arising above the strong, sturdy foliage,

GLOXINIA.

make them beautiful objects for any position. By potting at different periods, a succession of flowers can be had the entire season.

Good varieties may be secured from seed, if collected from a good strain. Sow the seeds on finely sifted soil, be careful in watering, and, instead of covering with soil, cover the pan or pot with a piece of glass until vegetation begins, and at all times, until the plantlets set good roots, do not allow them to get dry, or allow the sun to shine on them, as they are very easily destroyed with such treatment.

As soon as the seedlings are large enough to be handled, transplant into pans about an inch apart each way, keep them in a moist, hot atmosphere, where they shall grow rapidly. When the plants have grown sufficiently large to touch each other, pot into small pots, using as soil good fibrous loam, leaf-mold, and thoroughly rotted manure, with plenty of sand to give porosity to the compost, as they require it shifted into larger pots, until they show signs of flowering. When in flower, keep in a rather cool house, as in a cool temperature flowers keep much longer in perfection, especially if they are kept perfectly dry. Moisture on leaves and flowers is apt to destroy them. Keep

GESNERA.

perfectly dry when at rest, and in a cool house.

Propagation can also be effected by the leaves. Either insert the end of the petiole in sand where a brisk heat can be maintained, or lay the leaf flat on the sand and cut the mid-rib through just below the junction of the veins with the rib; by this means a plant can be produced at every cut. Pot when large enough, and treat as directed for seedlings. There are varieties with drooping flowers, with erect, and some with semi-double. Any and all kinds may be produced from a package of good seed.

M. MILTON.

ECHEVERIA METALLICA.

The easiest way of propagating these beautiful plants is from seed, which should be sown either in warmth during early spring, or after that time in a cool house or frame. The seeds are extremely fine, like dust, indeed, and the only way to get them up is to fill the pot with fine soil to within a quarter of an inch of the rim, make the surface firm, but not hard, and very level, watering sufficiently to moisten it through; then coat it with dry silver sand; sow the seeds thereon and press them in gently, which will cover them sufficiently; place the pot where it cannot dry out quickly, and be careful never to allow the surface to become in the least dry. When the young plants appear, move them to the full light, and when large enough to handle prick them out in six-inch pots or pans.

Grow during the summer in a light, airy greenhouse, potting singly into small pots when large enough, using sandy loam and giving good drainage. In the course of a couple of years they will come into six-inch pots, and in these they may remain for two or three years, as they bloom best when root-bound. Well grown, they flower freely in winter and early spring, and are very ornamental. A cool greenhouse in winter suits them best.—*Gardening Illustrated.*

Lawn and Landscape.

LANDSCAPE GARDENING.

Owners who build in new places, which are destitute of trees, often feel disposed to cover the baldness by planting thickly over the whole surface. In this way two mistakes are committed.

Handsome landscape planting consists in leaving at least a portion of the grounds as open lawn, so that there may be an agreeable distribution of trees and open space, and thus the eye may have a wider range. The thick planting grows tall, the trees are crowded and drawn up without side limbs. The owner often lacks the nerve to thin them out in time, or some of his family dread to see their favorites, as they regard all the trees, remorselessly sacrificed. It is therefore well, in setting out ornamentals, to bear in mind how large they will become, and how far their branches will extend, if allowed free scope, in future years. If a greater number is indispensable, plant smaller kinds.

Among these smaller ones may be named the different varieties of the Horse-chestnut, the Mountain Ash, the Judas tree, Sweet Gum, Hawthorn, Virgilia, *Acer campestre*, and *Magnolia tripetala* and *Soulangeana*. Among the smaller evergreen trees are White Spruce, Cembrian Pine, Red Cedar, and Siberian Arbor Vitæ. The larger shrubs may come in near the boundaries of the larger plantings, or next the open lawn, and these may include the Tartarian Honeysuckle, the Philadelphus, the larger Lilacs, the Purple Fringe, and the Purple Barberry.

Hardy climbers may be moderately introduced in the more remote or secluded portions of the grounds, such, for example, as the Virginia Creeper, the Trumpet Creeper, the Aristolochia, the Akebia, and the common White Clematis. But stiff wooden structures to support them should be entirely excluded. A festoon or two on an old tree would be more pleasing.

Much labor is often needlessly expended in heavy grading, in the attempt to reduce the surface to an exact plain. If naturally uneven, all that is necessary is to round off the sharp angles, partly filling abrupt depressions. The curved surface thus obtained, if judiciously managed, will be made more pleasing than a dead level. The ground must be smooth enough for the lawn-mower, — the great leading implement for beautifying home grounds.

Farmers may object to these improvements on account of the expense. But those who regard as a matter of importance making their homes pleasant and comfortable to their families, and attractive to young persons who are growing up, and who are about to choose between a wholesome and useful country life on the one hand, and one either of a roving character or with the uncertainty of the city on the other, ought not to hesitate in devoting some attention to pleasing surroundings of their dwellings. The expense may be varied indefinitely at the option of the owner. If he has a mortgage on his farm which he is endeavoring to reduce, he may still secure much that is desirable with very little outlay.

A half acre or more may be spared from his hundred-acre farm without any great loss, and he may plant it with a few dollars worth and labor. He may run the hand lawn-mower over it once a week until the end of summer, or thirteen times at a cost of less than five dollars. The foot-walks should be few, that they may be more easily kept in order, and the entire expense of keeping them neatly trimmed need not be more than one dollar. Only six dollars a season after the grounds are planted, ought to satisfy the most parsimonious, for the good it would do.

With a little more liberality, a few circular or elliptical flower-beds might be cut in the smooth turf, and give great additional beauty to the place. The man who is in debt, or who has very small means, should be willing to do as much as this, many of whom are spending a great deal on worse than useless Tobacco, and who might find various means for useful retrenchment by reading Dr. Franklin's "Poor Richard."

These remarks are intended, however, for those who can well afford to make liberal provision for pleasant surroundings for their dwellings, with shrubbery and flowers near the house, and handsome shade trees on the more remote portions of the ground; and who, if ample provision is made besides for such fruit as Strawberries, Raspberries, and the summer ripening varieties of Peaches, Apricots, and Pears, will find little difficulty in affording home attractions to their growing-up boys, and drawing them from a roving and profitless life.

Those who have large farms and plenty of land to spare, and especially those who occupy the broad plains of the West, may give their home grounds a park-like appearance by devoting several acres to planting shade trees, and grass may be kept short by the grazing of sheep. Let the trees be planted far enough apart for full development of their rich forms, and when they are full-grown, such trees as the Oak, Chestnut, Black Walnut, Elm, Maple, and many others, properly grouped and distributed, with broad sweeps of open lawn, will impart richness and magnificence to the landscape, and all will remain year after year with little or no attention. Where there is some natural growth of these trees already on the farm, enough may be carefully retained to impart this fine result at once without waiting for the trees to grow.—*J. J. Thomas, before the Western N. Y. Horticultural Society.*

MENDING HEDGES.

One of the most annoying sights in a lawn or garden is a defective hedge. When only single trees or bushes are missing, the branches of the adjoining ones may generally be trained so as to fill out the gaps, but when several successive ones are wanting, their places have to be filled with new plants. The difficulty which presents itself in this case is that the roots of the adjoining and well established plants take so much moisture and nutriment from the soil in which the young plants are placed that they can make but a puny and sickly growth, and generally die in the course of a year or so.

To insure success a trench must be dug the entire length of the gap. This should be three feet wide and as deep as the roots of the hedge run; all roots that come in the way have to be cut off clean, and removed. The trench should then be filled with fresh, rich soil, in which the young trees are to be planted, and if the work is done carefully, a good mulch applied during summer, and a liberal coat of manure next fall, the plants will grow readily and soon fill out the gaps.

HARDY RHODODENDRONS.

"Are there any really hardy Rhododendrons?" is an inquiry on hand. As was stated in a former number of THE AMERICAN GARDEN, none are as hardy as a White Oak, yet with but very little attention to their natural habits and requirements some of the most beautiful kinds may be grown out doors to perfection.

The best hardy varieties we are acquainted with are: *album elegans*, very large white; *delicatissimum*, white and blush; *Everestianum*, rosy lilac; *Lee's Purple*, very large dark purple; and *roseum elegans*, delicate rose. These will give as much variety of color as is possible in a small collection, and will, with fair attention, thrive anywhere. Where these fail it is useless to try others.

In making an additional list of about a dozen varieties no two growers would probably agree entirely. From a comparison of some of the best collections in the vicinity of New-York, Philadelphia, and Boston, our choice would be: *Alexander Dancer, atrosanguineum, blandum, Blandyanum, Charles Dickens, Gen. Grant, giganteum, gloriosum, grandiflorum, H. W. Sargent, Mrs. Milner, purpureum elegans.*

PLANTING FORESTS.

It is a matter of common observation that whenever any tree grows in an isolated position in the open field it will form a very short trunk and a large spreading top, and that while trees grown for their fruit yield the best returns when of this character, quite the reverse is true when the object of its production is timber. By observation of natural forests, and from the experience of planters in Europe and elsewhere, we learn that the best timber results are produced by planting the trees closely enough at the start, so that after a year or two of cultivation a constant shading of the surface will be maintained during the growing season, and at the same time each individual tree will have enough room to make a healthy growth, thinning out by removing alternate trees from time to time, as more space is required.

— *Forest Leaves.*

BOX EDGINGS.

If there is any old Box on the place, the clumps may be dug up and torn in even-sized pieces so that some roots remain to each piece, otherwise it may be obtained from any nurseryman. A ditch is dug along the walk where the edging is wanted, and the slips are placed along the straight edge so that about an inch of the top remains above the ground. Fine soil is then drawn into the ditch, firmly pressed down with the foot, and all leveled. If the weather is very dry the plants should be watered evenings and a light mulch applied during summer. The earlier in spring it is planted the better are the chances for success. To preserve its freshness and uniform shape it has to be sheared every spring, taking care never to cut below last year's growth.

Rural Life.

BIRD HOMES.

Blue-birds, martens, wrens, and the European sparrow, will all occupy houses built for them, seeming to prefer to be near our homes and to court our protection.

When traveling along our Eastern coast line, from New York to Maine, says A. W. Roberts, in the *Young Scientist*, I found the European sparrow everywhere, even at Grand Menan; and I was much amused at the many crude and comical styles of bird-houses in use. Milk cans, butter firkins, old straw hats, and discarded bee-hives were utilized for this purpose, and in one case a farmer had scooped out several hook-necked squash and club gourds which he had fastened under the eaves of his barn, for some wrens, who had taken possession of them.

The prevailing school of bird-house architecture is very primitive and very ugly. And, as if to add to their ugliness, they were often painted of either a dead white, ultramarine blue, bright green, or yellow, and occasionally bright red, and even black.

None of our native birds would be guilty of ever taking up quarters in a vermilion colored house, but those feathered tramps and loafers, the sparrows, ever ready to crawl into any hole or place to secure a footing, in this instance seemed color blind or indifferent, so long as they obtained a roof to shelter them.

In painting bird-houses, never use bright or glaring colors or gilding, as it is not only in bad taste and not in harmony with nature, but to birds of modest and retiring habits is very displeasing. Imagine a pair of our plaintive-voiced blue-birds dwelling in a bright yellow house! think of their rich blue against a vulgar yellow! Could any combination of colors be more inharmonious and displeasing to an educated eye?

All that birds require is a quiet and secure situation for their homes. My father some years ago fastened a number of flower-pots against the side of a brick house. The holes at the bottom of the pots were made large enough for wrens, and too small for blue-birds. As a battle had been raging for a number of days between the wrens and a pair of blue-birds over the possession of the only bird-house on the grounds, the flower-pots pleased the wrens, who took immediate possession, and ceased their warfare on their neighbors.

I have since used flower-pots extensively in constructing bird-houses, and will try to give the readers my experience as a bird-house builder.

The simplest plan is to fasten a seven-inch pot against a stone wall; a hole is cut out of the bottom of the pot large enough to admit of either wrens or sparrows. For cutting the hole, use the large blade of a jack-knife, well notched, and soften the ware thoroughly with water. This reduces friction, and prevents clogging, or drawing the temper of the blade. The hole, after it is cut, can be filed to any desired shape. The pot is held against the wall where it is to be fastened by leaning a post or board against it.

For a cement for fastening, plaster of Paris is to be preferred to Portland cement for light work, and also for its quick setting qualities, which may be hastened by adding a little salt. The plaster should be applied rapidly about the rim of the pot, and against the wall, till a perfect union is formed. The pot and the wall must be first dampened with water, or the plaster will not adhere.

After the plaster has set, the board prop is withdrawn, and work on another pot begun. When all the pots are fastened in position, the plaster is given twenty-four hours to dry and harden before putting on the rough coating, as the weight of this coating might break away the pots. The rough coating is applied with a broad-bladed table-knife, or "pointing" trowel. Load the trowel with plaster, with the left hand urging the flow of the plaster from the point of the trowel with a stick, the point of which has been well greased or soaked in oil, to prevent the plaster adhering and forming a knob.

When it is desired to make the bird-houses look more picturesque, pieces of lichens and wood mosses may be fastened on with plaster; small branches of vines may also be brought down and around the pot, and for a perch or rest in front of the entrance, a dead twig or branch may be used. These are also fastened to the pot with plaster.

After the plaster is perfectly dry, it should get a heavy coat of boiled linseed oil, mixed with a dull green, brown, or neutral tint. The oil protects the plaster from the action of rain and the atmosphere.

A hanging bird-house may be constructed of a nine-inch flower-pot and an old milk-pan. A hole is made in the bottom of the pot and pan large enough for a turned picket or stick to pass through, and to allow for the fastening of the straw which is to form the thatched roof. A hole is bored through the picket into which a cross-pin of wood or iron is inserted, on which the bottom of the pan rests, otherwise it and the pot would slip off.

The milk-pan is punched full of holes to allow the plaster to pass through and clinch, as it will not adhere to the smooth surface of the tin. In applying the plaster to the pot, an extra quantity is used on the inner bottom of the pan, to more firmly unite the pot and pan together. After the plaster has hardened, the rough coating is applied as before described. The pan, after it is filled with earth, is planted with Tradescantia, German Ivy, or Madeira Vines, which will cling and twine to the brush cat-screen. Some of the more hardy succulent plants, such as House Leeks, Creeping Charley, Semper-vivum, etc. may also be used.

The cat-screen is made of the branches of black alder firmly bound to the picket, some two feet below the bottom of the pan, against which they press and radiate out, forming an effectual obstruction to cats, as well as looking very ornamental when the vines are growing among the mass of branches, buds, and burrs. The best and most ornamental woods for making these screens are Red Birch (with the cones on), Spruce with its rich buds, and Sweet Gum Tree, all very pliable, and easy to handle.

Where a number of pots and pans are to be fastened together, great care must be taken to firmly unite the parts together with a bountiful quantity of plaster, laid on thick. Much taste and skill can be displayed in the different designs formed on the pots with the plaster, but care must be taken to have them in good taste and in keeping with the surroundings.

THE COUNTRY PIAZZA.

The piazza, veranda, or porch of a house can scarcely be called an "interior"; but to the country-house it is really an outdoor parlor in warm weather, and should be made as attractive as possible. It is sometimes so cramped in its proportions as to offer little opportunity for decorative improvements—but, with a reasonable amount of space, it can be made a very delightful adjunct to the country sitting-room.

If large enough to admit such a piece of furniture, a settee, or rattan lounge will be found a most convenient addition, and a thin, flat cushion will be an improvement both in looks and in comfort. Scarlet is the most effective color for this, as contrasting well with the masses of green outside. Scarlet painted chairs have been in vogue for rural piazzas for some years past, and although a superabundance of the color is rather dazzling, it is toned down by the background of green.

Another pretty device for piazza furnishing is to make three or more large pillows of very broad-striped bed-ticking, and cover the blue stripes alternately with scarlet and green braid. This gives a Moorish or Algerian appearance to the cushions, which are to be piled in a corner, and in front of them may be spread a cheap Persian or Turkey mat—or one made of the same inexpensive materials with varied coloring, substantially lined, and edged with worsted fringe.

A rustic table at one end of the piazza to hold newspapers and magazines, the writing portfolio, or the basket of crewels, looks cozy and sociable. A bird-house fastened to one of the pillows and draped with light vines, is really ornamental, and the winged residents, with restless flashings in and out, and their funny little airs of importance, form an endless subject of interest to the invalid whose sole view of outside things must be taken from the piazza.

It sometimes happens that one end of this roofed balcony is exposed to a hopeless glare; no friendly tree stretches forth protecting boughs across it, no vine weaves a web of tender green from end to end; the vegetable world, for some occult reason, avoids it. An awning is the usual resource in such a case, but the striped hood forms only a partial screen. A more effective one is formed by making a net-work of heavy twine, or wire, with a square or diamond-shaped opening left to form a window; at the base of the net-work plant Cypress and Madeira vines, and you will have a shade pleasing and refreshing to the eye, covered with verdure and bloom, and one that will admit of the air freely passing through it.

Hardy vines upon all sides of the country piazza are taken for granted; but the selection should be made with care. For steady wearing qualities, after it has once decided to live and grow—and it is somewhat slow in coming to this decision—nothing is more satisfactory than the Japanese Ivy. The summer foliage is of a rich, tender green, and the young leaf-sprays are very fine and beautiful; while it has additional recommendation of varied autumn coloring. The Evergreen Honeysuckle is another desirable vine for the piazza, while the large, blue *Clematis Jackmanni* is very ornamental. The three combined will make a delightful leafy bower.—*Ella Rodman Church, in Godey's Lady's Book.*

Foreign Gardening.

LAND CULTURE IN GUATEMALA.

In clearing a Guatemalan forest the trees are felled in January, February, and March, and during April and May the fallen timber is burned, only the huge logs and stumps being left for the ants to remove. The field is then tolerably clear and ready for planting, which should be done before the rainy season begins, in June.

The crops best adapted for cultivation are in a measure indicated by the existence of wild specimens. Thus the Cacao, which abounds wild, is a most valuable crop. Rows of Bananas or Plantains are set out, fourteen or fifteen feet apart, to protect the young Cacao-trees until the Erythrinas, or "Madre Cacao," are sufficiently grown, for the Cacao is impatient of the direct sun. Plants are raised from seed and begin to flower at three years, but do not bear a good crop until five years. There are two crops yearly—one in December and January, and a larger one in May and June. The tree endures about forty years, and each yields about a pound and a half.

Pine-apples grow wild wherever there is a clearing, and the quality is far better than any we find in our markets. When cultivated, the field is cleaned five or six times a year, and the crop is ready sixteen or eighteen months after planting, and may be computed at four thousand fruits per acre. No replanting is necessary, and it is only needed to thin out the plants yearly.

The beautiful and interesting Nutmeg-tree grows about thirty feet high, and is very long-lived. The climate and soil are very suitable for it. It begins to bear at the seventh year, and by the ninth the yield may be five thousand fruits, besides seventy-five pounds of Mace.

The Cocoa-nut is, perhaps, one of the most profitable ventures, as after the first two years no care is required. At five years they begin to bear, and two years later the crop in these favored lands should average two hundred nuts to a tree.

Bananas are cultivated in all the bottom lands, and are exceedingly profitable. Great mistakes have been made in its cultivation, especially in not giving the plants room enough, for, if crowded or shaded, the bunches, which may weigh ninety pounds, dwindle to twenty-five, and are no longer marketable. The Plantains are much larger, often fifteen to twenty inches long, of firmer substance, and are generally eaten cooked, and it is a matter of surprise and regret that we do not find this most excellent vegetable in our markets.

Maize produces three crops in a year, and grows so tall that the essayist could not reach the ears (three to a stalk) on horseback, and had to fell this Corn-tree to get them.

The most important crops are Coffee and Sugar-cane; but Oranges, Lemons, Limes, Citrons, Pompelnoes, Shaddocks, Figs, Rose Apples, Chorimolias, Mammees, Alligator Pears, Sapotas, Granadillas, Bread-fruits, Tamarinds, Papayas, and hosts of other fine fruits, whose very names are strange to us, all grow luxuriantly.

Most of the Coffee for which Guatemala is so justly celebrated is grown in the department of Alta Verapaz, in the vicinity of Coban, and on the Pacific side of the high table-lands of the interior; but it has been found that the Liberian Coffee flourishes on the Atlantic forest belt, and will probably do better than the Arabian. The trees require shade, especially when young, and Bananas are usually planted with them. The labor of picking, the care needed in drying, and the mechanical processes of hulling, render this a more difficult crop to harvest than any hitherto mentioned, and where the soil is not deep it is soon exhausted by Coffee; but it is a very profitable crop, notwithstanding.

These rich lands are most admirably adapted to Sugar-raising. In Louisiana this is profitable, thanks to the tariff protection, but it is evidently a forcing of Nature. The planter there has great difficulty in preserving his seed-cane through the winter, and must grind his crop before frost.

Hence he has to have an immense mill in proportion to his acreage, and must grind his entire crop in ten days or a fortnight, while his expensive mill is idle all the rest of the year, and the crop seldom exceeds a ton to the acre of the poorest quality of Sugar.

In Guatemala the land is not even plowed for Sugar, but a hoe scratches the furrows, into which the seed-cane is laid, and a few strokes of the hoe cover it. Then begins the fight with weeds; as the planting is done in May, before the June rains come on, the first weeding will be needed in June, and by the end of July the young cane will be high enough to get ahead of the weeds. Twice at least thereafter the process of thrashing goes on. This consists in passing down the rows and breaking off the dead lower leaves and trampling them under foot, which makes an excellent mulching. In January the cutting begins, and as there is no frost it may last three months, if necessary, and the yield averages four tons to the acre of the best refinery Sugar. But the most remarkable contrast to Louisiana Sugar-raising is that, while there the laborious planting must be done every year, in the bottom lands of Guatemala crops have been cut sixteen years without replanting, with no perceptible diminution in the yield.—*W. T. Brigham, before the Mass. Horticultural Society.*

BERMUDA GARDENS.

In this sub-tropical island, where the mean temperature for the coldest months is 62°—the coldest point reached last winter being 57°, and the highest 76°—I begin planting my garden about September 20; planting Potatoes, Turnips, Cabbage, Carrots, Beets, Beans, Peas, Lettuce, Tomatoes, Onions, Spinach, Cauliflower, Celery, Parsnips, and all those vegetables which will flourish at a temperature below 76°. I plant every two weeks from September to March the Potato, Bean, and Beet, thus growing a succession of fresh new vegetables for my table from November 15 on through nearly all the twelvemonth. My Strawberries begin fruiting in January, and keep it up until April; and luscious ones they are, too.

In February I begin planting Cucumbers, Melons, Squash, Sweet Corn, Egg-plant, and all the vegetables needing greater heat than is assured us in the early winter months, and continue to plant every two weeks to April 15. After this date it is of little use to plant anything but Sweet Potatoes; not because the weather is too hot—85° being the highest point ever reached—but they simply wont grow. For ten months of the year I am assured a nice variety of vegetables, and for the two other months I have Sweet Potatoes and Egg-plant, so I manage to survive. The ground of my garden is really occupied with a crop for the whole year. Of course this is very trying to the soil; but I fertilize highly with stable manure, artificial fertilizer, and sea-weed. Almost every vegetable raised in the temperate zone will flourish here, though some utterly refuse to grow.

The farmer of Bermuda devotes almost his entire energies to the raising of Potatoes, Onions, and Tomatoes, though many now are trying other crops. Several are trying Strawberries, others Grapes, both Northern and exotic; others Beans, Peas, Egg-plant, and Cauliflower. One farmer has been experimenting in raising extensively the Bermuda Easter Lily, a beautiful white Lily which flourishes here to a wonderful degree. His fields of two hundred thousand bulbs, white with blossoms, is a rare sight to behold. If these blossoms could only be put down on Broadway, on a February day, his fortune would be assured; but, unfortunately, he cannot, and he makes his money by selling the bulbs to the American and European florists, who force these bulbs in greenhouses and put the blossom on your market in the winter months at large prices.—*Russell Hastings, in N. Y. Tribune.*

COCOA-NUTS IN INDIA.

Curiously enough, at a little distance from the sandy levels or alluvial flats of the sea-shore, the sea-loving Cocoa-nut will not bring its nuts to perfection. It will grow, indeed, but it will not thrive or fruit in due season. On the coast-line of Southern India immense groves of Cocoa-nuts fringe the shore for miles and miles together; and in some parts, as in Travancore, they form the chief agricultural staple of the whole country. "The state has hence facetiously been called Cocoanut-core," says its historian; which charmingly illustrates the true Anglo-Indian notion of what constitutes facetiousness, and ought to strike the last nail into the coffin of a competitive examination system.

A good tree, in full-bearing, should produce one hundred and twenty Cocoa-nuts in a season; so that a very small grove is quite sufficient to maintain a respectable family in decency and comfort. Ah, what a mistake the English climate made when it left off its primitive warmth of the tertiary period, and got chilled by the ice and snow of the glacial epoch down to its present misty and dreary wheat-growing condition!

If it were not for that, these odious habits of steady industry and perseverance might never have been developed in ourselves at all, and we might be lazily picking copra off our own Cocoa-palms to this day, to export in return for the piece-goods of some Arctic Manchester, situated somewhere about the north of Spitzbergen or the New Siberian Islands.—*Allen Grant, in Cornhill Magazine.*

Horticultural Societies.

NEW-YORK HORTICULTURAL SOCIETY.

In variety of exhibits, as well as in excellence of many single specimens, the May Exhibition of this Society was fully equal to any previous meetings, and the courageous exhibitors who, in spite of one of the fiercest storms and rains, brought their plants from great distances, and filled all the tables, deserve much credit and praise.

The gem of the exhibition was, without a doubt, Woolson & Co.'s collection of Herbaceous Plants, filling a wide table through the entire length of the hall. If there had not been anything else but this, it would have been well worth a long journey to see it. There were many hundreds of species of perennial plants from all parts of the world, comprising, we should think, about everything in flower at this season; in fact, this exhibit was a botanical garden in itself.

About one-third of the hall was occupied by the brilliant display of Geraniums from Hallock & Thorpe, who, as usual, took every prize they competed for. If a more magnificent and more meritorious exhibit of Geraniums has ever been made in this city, it has not been our good fortune to see it. There were double and single zonal, large flowering, regal, tricolor, bronze, silver, double and single Ivy-leaved, sweet scented, of every color and shape and size possible in the Geranium tribe.

There were several collections of tropical plants of rare beauty, also Orchids which, for the season, were unusually fine.

Of course there were quantities of beautiful Roses of all the leading kinds in bloom at this season; and, among the many other handsome exhibits we noticed collections of Tulips, Hyacinths, Lilies of the Valley, Pansies, Carnations, Amaryllis, Azaleas, Calceolarias, Chrysanthemums, and some flowers of *Nymphæa cærulea*.

Very large and well-grown forced Strawberries were shown by several exhibitors, and attracted deserved attention.

The special Rose and Strawberry Show will be held about the middle of June. Schedules of premiums may be had from the secretary, James Y. Murkland, 18 Cortlandt street, New-York.

THE AMERICAN INSTITUTE OF NEW-YORK.

The Horticultural Committee of the Institute has decided to make the Fruit and Flower Shows during the annual exhibition a more prominent feature, and has issued a neat little pamphlet enumerating the awards offered in the various departments. The prizes offered are very liberal, and being made public so early should induce florists and gardeners to exert themselves in raising superior show specimens.

The exhibition of Fruits and Flowers will open on Wednesday the 8th, and continue till Saturday the 11th of October. There will be a special show of Geraniums on October 15th, 16th, and 17th; and a special Chrysanthemum Show from October 29th till November 1st.

Persons intending to exhibit may receive the Premium List and Rules governing the Exhibition by addressing Secretary *John W. Chambers, American Institute, New-York.*

MASSACHUSETTS HORTICULTURAL SOCIETY.

The exhibition of May 10th showed that spring had indeed come, for, while the greater part of the contributions were from the greenhouse, and even the Pansies had received the protection of a cold frame, the gorgeous Tulips from John L. Gardner, the interesting, carefully-named, and therefore instructive collection of herbaceous plants from J. W. Manning, the Violets of solid purple from B. R. Freeman, and the pretty collection of wild flowers from Mrs. P. D. Richards, had received no other warmth than Mother Nature gives her floral children. Among those which are more dependent on art, the beautiful specimens of *Anemone coronaria* from E. L. Beard, in wonderful variety and richness of coloring, were perhaps the most striking. Mr. Beard also exhibited a collection of Pansies, which took the first prize, and there were fine specimens of Pansies from six other contributors. Edwin Sheppard's collection of cut flowers included some remarkably fine specimens of *Stephanotis floribunda*, and W. K. Wood's a new fragrant Crinum from the Cape of Good Hope. Hovey & Co. filled a stand with Zonale and other Pelargoniums (which, though small, were good), Azaleas, and Primulas. John L. Gardner had a stand of greenhouse plants, including Heaths, Eriostemons, and *Anopteris glandulosa*. B. G. Smith showed flowers of *Andromeda floribunda*. In the Vegetable Department, John B. Moore showed specimens of his new cross-bred Asparagus, which took the first prize, and there were also Rhubarb and Dandelions of outdoor growth, and Cucumbers and Tomatoes from under glass. The only fruit was a dish of well-kept Baldwin Apples.

The society has decided to hold its Great Annual Rose and Strawberry Exhibition for two days instead of one, opening at 1 P. M. Tuesday, June 24th, and continuing day and evening until ten o'clock Wednesday evening. The society has been led to make this change by the unusual interest manifested by the public in all its exhibitions, and as the forthcoming Rose Show will unquestionably bring together the most extensive display of Roses of all classes ever shown in this country, it is not likely that even two days will suffice to accommodate those who admire this popular flower.

The present season is promising unusually well for outdoor Roses, and the quality of bloom is likely to be of a higher standard than usual.

In addition to the cash prizes offered by the society, a large subscription fund has been raised and most liberal special prizes are offered for Hybrid Perpetual Roses.

WEST TENNESSEE HORTICULTURAL SOCIETY.

The long-anticipated Strawberry and Flower Exhibition of this young and vigorous society, held at Jackson on May 9th and 10th, has passed, and all who attended it had "a glorious time." Many prominent horticulturists were present, and thousands of visitors thronged the grounds. The whole affair was a grand success, and cannot but draw the attention of fruit-growers to the great advantages of the hitherto little known superior fruit-lands of this section. Large and excellent as the exhibition was, it would have been of still greater dimensions had not a severe hail-storm during the previous week made sad havoc among the Strawberry fields of the vicinity.

The largest single berry, a *Warren*, filling an ordinary tea-cup, was exhibited by Mr. John T. Stark, who had also among his exhibits a quart of *Sharpless*, which contained only twenty-three berries.

Mr. John W. Rosamon, of Gadsden, the president, was awarded the premium for the best shipping variety, a quart of what he calls *Crescent Seedling*. The berries had been picked early on May 7th, and were perfectly fresh and firm on May 10th. Mr. Parker Earl, Dr. J. H. Sandborn, and other experienced fruit-growers, pronounced them *Capt. Jack*, however, and the matter is causing considerable comment in fruit circles. It would be strange, indeed, if locality and soil should transform so soft a berry as the Crescent into a firm, first-class shipping berry. We should like to see a leaf of this supposed Crescent, to ascertain whether the foliage has changed also.

AMERICAN ASSOCIATION OF NURSERYMEN.

The ninth annual session of this society will be held in Chicago, Ill., commencing Wednesday, June 18th, at 10 A. M., and continuing three days.

Among the objects sought by the association are: The cultivation of personal acquaintance with others engaged in the trade; the exchange and sale of nursery products implements, and labor-saving devices; to procure quicker transit, more reasonable rates, and avoiding needless exposure of nursery products when in transit; the perfection of better methods of culture, grading, packing, and sale of stock; the exhibition and introduction of new varieties of fruits, trees, plants, etc.; to promote honest and honorable dealing.

This session promises to be of unusual interest, and will no doubt be attended by many of our prominent nurserymen, seedsmen, florists, as well as amateur horticulturists. The beneficial influence of this society becomes more and more apparent with each succeeding year, and the valuable information furnished through the papers read at these meetings, and the discussions thereon, could hardly be obtained elsewhere. Any one at all interested in horticulture will be well repaid by attending this session.

IT PAYS TO ADVERTISE IN THE AMERICAN GARDEN.

From Thos. W. Weathered, manufacturer of Hot Water Apparatus for warming Greenhouses, Graperies, etc., 46 Marion street, New-York:

"I am pleased to state that THE AMERICAN GARDEN is the best advertising medium I have ever used."

From Delos Staples, Supt. Willow Ridge Fruit Farm, West Sebewa, Mich.:

"I have had my advertisement in *twenty* of the leading agricultural papers this spring, and it will only be doing justice to you to say that I received more orders from my advertisement in THE AMERICAN GARDEN than all the rest put together, with but a single exception."

From H. Gillette, Proprietor of the Highland Park Nurseries, Ill.

"As an advertising medium THE AMERICAN GARDEN is simply immense. It has brought me more orders than any paper I have ever advertised in."

NOTICES OF THE PRESS.

THE AMERICAN GARDEN is a model of beauty and neatness.—*Farmer's Home.*

THE AMERICAN GARDEN is of special interest and value to all who have gardens of their own.—*Boston Saturday Evening Gazette.*

THE AMERICAN GARDEN is one of the most excellent publications of its kind in America.—*North-western Farmer, Oregon.*

THE AMERICAN GARDEN is invaluable for every gardener and fruit-grower; its teachings are sound and sensible.—*City and Country.*

THE AMERICAN GARDEN appears in a more attractive shape than formerly, and is steadily improving in literary quality.—*Gardener's Magazine, London, England.*

THE AMERICAN GARDEN is a gem to be admired for its beauty and richness of contents. Any one desiring to learn all about the culture of flowers, fruits, and vegetables, should subscribe for it.—*The Item.*

We are pleased to notice the success of THE AMERICAN GARDEN, published by B. K. Bliss & Sons, New-York City, and edited by that most genial and experienced horticulturist, Dr. F. M. Hexamer. This journal is carefully edited, attractive in appearance, and decidedly readable in all its departments.—*Green's Fruit Recorder.*

If there is a better strictly horticultural journal published than THE AMERICAN GARDEN we have not yet seen it, and it could not be otherwise under the skillful, because practical, editorship of our good friend, Dr. Hexamer. When we say he is unquestionable authority on matters of horticulture, that's enough; and his paper shows it.—*Chatham Courier.*

OUR BOOK TABLE.

Young Men's Christian Association of New-York.—Thirty-first Annual Report, showing the growth and present condition of this admirable institution.

Kansas State Board of Agriculture.—Report for April, containing a summary of reports of correspondents as to the condition of Wheat, Rye, and Fruit, together with a paper on noxious insects, pig-feeding experiments, the agricultural position of Kansas, etc.

Godey's Lady's Book for June opens with a fine steel engraving of Alfred Ward's portrait of Helen Mathers, the celebrated English authoress, whose new story, "Dreeing of the Weird," will commence with the July issue of the magazine. The present number contains a great deal of spirited and readable matter. "The Ship of Fate," by Constance Du Bois, is especially notable; the theme of the story is a matter of history. In addition to the articles mentioned, the magazine contains many interesting stories, poems, etc., besides the usual handsome illustrations and supplements.

Home Science.—A monthly magazine, published by *Selden R. Hopkins, 29 Warren St., New-York.* The initial number of this elegant publication is received, and it is with much interest that we have perused its pages. There is a wide, boundless field for such a magazine, devoted to science in the home, and of the home, and the publishers as well as the editor seem well prepared and amply capable to carry out this praiseworthy undertaking. We wish them full success in their endeavor to "sweeten as well as enlighten, to shed the fragrance as well as the brightness and warmth of living truth over every home." Among the brilliant array of contributors to this number are: Rev. T. DeWitt Talmage, Rev. Robert Collyer, Prof. Edw. P. Thwing, Dr. Dio Lewis, Dr. Byron D. Halsted, Rev. R. S. Storrs, Miss M. E. Winslow, Nathaniel J. Allen, and others.

Michigan Horticulture.—Thirteenth Annual Report of the Secretary of the State Horticultural Society. Of the many similar reports which reach our table, none are more highly appreciated and more frequently referred to than these carefully edited and elegantly finished volumes. Mr. Chas. W. Garfield, the accomplished secretary, takes great pains to embody in his work only matter of real value to horticulturists, and as he does not confine himself to the proceedings of the society only, but gives in his "Portfolio" an epitome of the cream of the entire horticultural press of the country, selected with commendable discrimination and sound judgment, a series of these reports forms almost an encyclopedia of horticulture. A "Primer of Horticulture" which we have mentioned in a previous number is also embodied in the volume. Every member of the society is entitled to this model report, which in itself is worth many times more than the member's fee.

Profitable Poultry-Keeping, by Stephen Beale, edited by Colonel Mason C. Weld. Published by *George Routledge & Sons, 9 Lafayette Place, New-York.* Elegantly bound in cloth; price, $1.50. The publishers, in bringing this excellent work within the reach of every one, have ingratiated themselves to every American poultry-raiser; and they are to be congratulated upon having been fortunate to secure the services of so competent an editor as Colonel Mason C. Weld, whose extensive practical experience and thorough knowledge of the subject make him especially qualified for the work. As a hand-book and guide to those who intend to raise poultry for profit as well as for pleasure, the work stands unrivaled, and in heartily commending it to every one who seeks information about any or all branches of the subject, we say with the editor: "Here, take this book of Stephen Beale's, study it carefully in whatever it is applicable to your needs, and follow it. You will find in it a safe guide, and you will almost surely come out well with your poultry the first year."

"What and Why," received from Col. Albert A. Pope, Boston, Mass., is a finely printed and unique little volume upon cycling matters. The contents are made up of information which will doubtless create a renovation among wheelmen, for within the pages of the book is an ocean of matter in a bucket. "Some Common Questions" are catechetically answered in the plainest and most concise language,—questions with answers which give a complete history of cycling, its growth, usefulness, and popularity. A chapter christened "Legal Lifts" cites every bicycle case brought before the courts, and fully explains the rights of wheelmen. The book also gives hints on what the cycler should wear; mentions the little conveniences which might be forgotten; gives comparative records in walking, running, rowing, skating, trotting, tricycling, and bicycling; and closes with extracts from the public utterances of leading professional and public men. The sprightly semi-humorous sketch entitled "A Preparation of Iron," with an unmistakable bicycle moral, by the author, Chas. E. Pratt, Esq., is well worth reading.

The June Continent contains an unusual variety of interesting material from the pens of writers who are well and favorably known. Among them are John Vance Cheney, who writes of Richard Henry Dana; Margaret Vandegrift, who contributes a pleasant story, entitled "A Permanent Investment"; Mary N. Prescott and D. H. R. Goodale, who have poems; Rose Porter, who begins in this number a short serial, "Poetry and Prose; or, A Honeymoon Dinner"; Henry C. McCook, the course of whose "Tenants of an Old Farm" brings him once more to the consideration of spiders, which are his specialty; A. W. Tourgée, who discusses in his own vigorous way questions political, economic, and literary; and others who have interesting things to say and an agreeable way of saying them. The issue of a monthly edition of *The Continent*, in addition to the regular weekly numbers, is certainly justified by such installments as this part for June, which is rich in all the essentials of a well-stocked magazine. The illustrations are generous in number, of excellent quality, and are from the hands of illustrators of note.

"Everybody's Paint Book," a complete guide to the art of outdoor and indoor painting, designed for the special use of those who wish to do their own work, and consisting of practical lessons in plain painting, varnishing, polishing, staining, paper-hanging, kalsomining, etc., as well as directions for renovating furniture, and hints on artistic work for home decorations, together with a full description of the tools and materials used. Precise directions are given for mixing paints for all purposes. Illustrated. By F. B. Gardner. Price, one dollar. M. T. Richardson, Publisher, 7 Warren Street, New York.

This book has evidently been written to supply the wants of that numerous class who either cannot afford to employ the services of a professional painter, or who, for economical reasons, prefer to do odd jobs of painting about the house themselves. Great care is manifest throughout the 190 odd pages, of which it is comprised; to present each topic treated so clearly and fully that no one need fail in any job of painting he may wish to undertake from lack of explicit directions. The farmer may learn from this book how to paint his implements, wagons, and buildings, and the ladies are told how to renovate furniture, picture frames, etc., and make them look like new. A chapter on spatter work shows the girls how to make a variety of beautiful pictures at a trifling expense. Altogether, the book, which is sold at a reasonable price, may profitably find a place in every household. It is printed on fine paper, handsomely bound, and copiously illustrated.

Agriculture of Massachusetts.—Annual Report of the Secretary of the Board of Agriculture, with returns of the finances of the Agricultural Societies. Like its predecessors, this handsome volume is full of interesting and valuable information. It gives a full account of the proceedings of the annual meeting of the board, held at Lowell in December last, President Varnum's opening address, all the papers read during the session, and the discussions thereon. We have only space to mention a few of those which appeared to us most interesting: Veterinary Problems of the Day, by Dr. D. E. Salmon; Experiments with Fertilizers, by John W. Pierce; Market Gardening, by J. B. Moore; Jersey Cattle in America: their Present and Future; Fertilization of our Farms, by Elbridge Cushman; Cranberry Culture, by Winfield A. Stearns; Report on Commercial Fertilizers, by Professor C. A. Goessman. Then follow the Annual Report of the Director of the State Agricultural Experiment Station at Amherst; a paper on Sunshine on the Farm, by Dr. James R. Nichols; the report of the Martha's Vineyard Agricultural Society; and the report of the Massachusetts Agricultural College. Not the least interesting part of the volume are Secretary Russell's introductory remarks, which, although occupying but four pages, give as clear and comprehensive a statement of Massachusetts agriculture as would have taken many a man a whole volume to make known; but then the secretary has a peculiar knack of putting bulky matter in nut-shells. He lays special stress upon the importance of devising means for counterbalancing droughts, which are constantly becoming more frequent and disastrous in New England; irrigation, manuring, and especially better cultivation are suggested.

CATALOGUES RECEIVED.

Summit Lawn Poultry-Book, illustrated, showing Fowls, Plans, Houses, etc., as used at the yards of *R. B. Mitchell*, at Arlington Heights, Ill. This handsome catalogue contains, in addition to descriptions and prices of the stock offered for sale, a great deal of interesting and valuable information.

Chas. P. Willard & Co., 280 *to* 284 *Michigan Street, Chicago.*—Illustrated catalogue and price-list of Creamery Apparatus, General Dairy Supplies, Steam Engines and Boilers, Horse Powers, Farm Mills and Feed Cutters. Special attention is invited to their celebrated "Eight Butter Tubs."

The American Fruit Evaporator.—The handsome lithographic Manual on Evaporating Fruit, sent free by the *American Manufacturing Company, Waynesboro, Penn.*, should be read by all fruit-growers. It contains much information not elsewhere found in this profitable and important industry. Send for it.

The Northern Sugar-Cane Manual, together with illustrations, descriptions, and price-list of Cane Mills, Evaporators, Kettles, Defecators, Juice Pumps, Horse Powers, Steam Engines, and other American Sugar-Cane Machinery manufactured by George L. Squier, Buffalo, N. Y. The treatise on the Northern Sugar-Cane Industry, by Professors Weber and Scovell, contained in this pamphlet, is of great value to all interested in this industry.

ANSWERS TO CORRESPONDENTS.

Eucalyptus.—*C. C., Prescott, Ark.*—The Eucalyptus cannot be grown where the thermometer sinks much below the freezing point; it is therefore not hardy north of the Gulf States.

Plant for Name.—*Mrs. C. H., Lititz, Pa.*—The slip sent is a species of *Mesembryanthemum*. The plant delights in a hot, sunny position and light, sandy soil. It is readily propagated by cuttings, if not kept too moist.

Caladium esculentum Rotting.—*Mrs. M. C. S., Roxbury, Pa.*—The bulbs should not be planted before the ground is dry and warm, and then they should not be watered before they commence to grow, else they are very apt to rot; if started in pots in hot-beds the same precautions in regard to watering should be taken.

Early Strawberries.—*T. H. B., Crisfield, Md.*—Crescent, Duchess, Wilson are among the earliest market berries. Home-grown plants, if pure, well-cultivated, and properly cared for, are just as good as those procured from the North, in fact better, if the risks of transportation are put in consideration.

Squash Beetles.—*Mrs. C. H. Quitman, Mo.*—As soon as the plants appear above ground they should be dusted over with air-slacked lime every morning while the dew is on the leaves. Plant a dozen seeds in each hill and when the plants are large enough to be secure against the beetle, pull out all but the two or three strongest ones.

Black Currants.—*S. E., Bay View, Wis.*—All Currants, and especially the black varieties, do better on rather heavy, somewhat moist, than on sandy soil. If some clay can be added to the sand it will prove very beneficial, and good heavy mulching during summer, extending three to four feet around the bushes, will have an excellent effect.

Clematis.—*A. P., Middletown, Conn.*—It is the nature of the plant to die down to the ground in winter, but it should make a better growth during summer. They thrive best in rich soil of a light, loamy texture, but thorough drainage is indispensable to their healthy development. Mulching with old yard-manure will be found beneficial.

Bulbs Rotting.—*C. M. H. S., Chatham, N. J.*—Bulbs may become infected by various diseases, and some forms will remain in the ground for several years, attacking all the bulbs that may be planted in it, but the most frequent cause of rot is want of drainage. In deep, light, and well-drained soil there is little danger of bulbs rotting.

Vallota purpurea.—*C. W., Port Chester, N. Y.*—This bulb should be partly dried off during winter. It does not require very large pots, but if too crowded, it should, of course, be changed into a larger pot, in a mixture of equal parts of loam, leaf-mold, and sand. While growing or flowering it requires a great deal of water and full exposure to light.

Greenhouse Shelves.—*N. T. L., Astoria, N. Y.*—Plants that require a moist atmosphere do better when the pots are placed on sand, coal-ashes, or moss; in stove-houses and propagating houses this is especially desirable, but in ordinary greenhouses most plants succeed just as well, if not better, on the bare shelves, provided the watering is properly attended to.

Azaleas in Summer.—*Mrs. E. J. T., Green's Farms, Conn.*—The plants should not be placed in complete, but only partial shade, and never directly under the drip of trees. Good drainage is essential, and frequent re-potting—that is, as often as the roots are found to fill the entire pot—is necessary. They like a dark, peaty soil with a good part of sand. Frequent syringings of the foliage conduces also to the health of the plants.

Moss in Meadows and Lawns.—*W. A. S., Conn.*—The almost invariable cause of moss growing in meadows is that the ground is too wet for the growth of cultivated grasses. When only a few small, low spots are thus affected the moss may be pulled out with a prong hoe, the depressions filled in with clean soil and grass seed scattered over it. But where a considerable space is overgrown the only radical cure is drainage, followed by re-plowing and re-seeding.

Alfalfa, or Lucerne.—*B. T. E., Bovinia, N. Y.*—In the Northern States the seed should be sown in spring, as soon as the ground becomes dry and warm, but in the South fall sowing is more advantageous. The plant requires a dry and very deep soil; it is useless to try it on heavy clay or wet bottom lands. It may be sown in drills about eighteen inches apart, and cultivated with horse implements, or sown broadcast. For drill sowing it requires about ten pounds of seed per acre; for broadcast, about twenty pounds. It should always be sown alone, without the addition of grain or grass seed. When once established on fertile soil it lasts for many years, grows rapidly, and may be cut three and four times a year. An annual dressing of three to four hundred pounds of superphosphate of lime helps it wonderfully.

Melons and Squashes Dying.—*P., Flushing, N. Y.*—The Striped Beetle does not only destroy the young plants, but its larvæ—little white worms, about a third of an inch long—pierce into the roots of large, thrifty vines, which, in consequence, wilt and die. The beetle deposits its eggs near the roots, and whatever prevents its getting near them is a sure cure. Paris Green, Hellebore, Slug Shot, Buhach, are all used with varying success, but nothing is so certain as protecting the young vines with light frames covered with mosquito netting. It has been stated by good authority that small pieces of phosphorus, common friction matches even, placed around the stem, will drive away the beetles.

The Squash Borer comes later, and is a still more insidious enemy. It is the larva of a moth that lays her eggs on the stem near the roots, and which, as soon as hatched, gnaws into the stem, destroying its substance and life, similar to the Apple and Peach tree borer. Hilling the vines well up is a partial preventive, and phosphorus is said to be equally effective as against the Striped Beetle.

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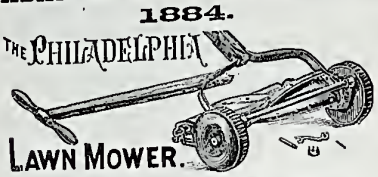

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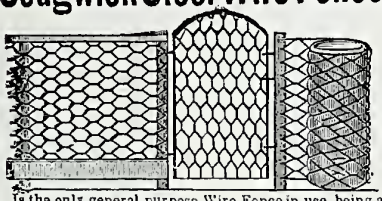

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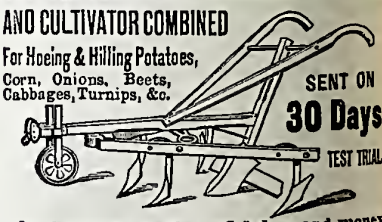

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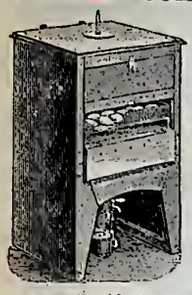

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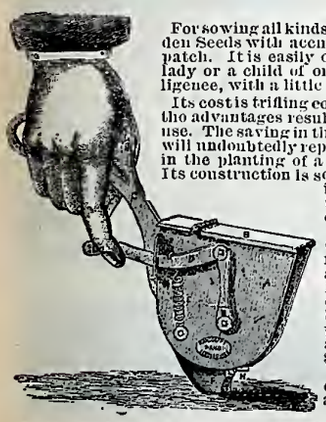

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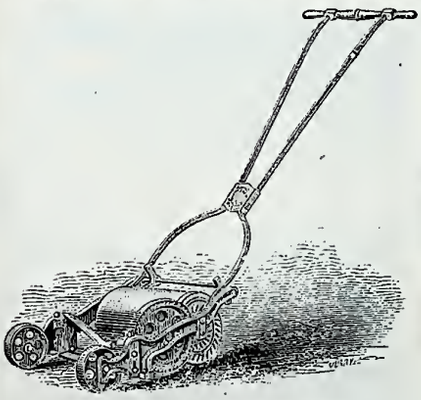

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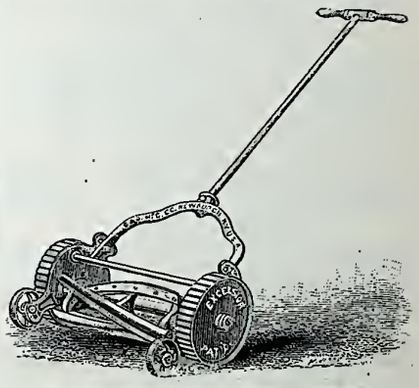

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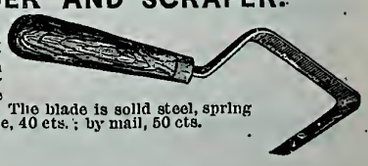

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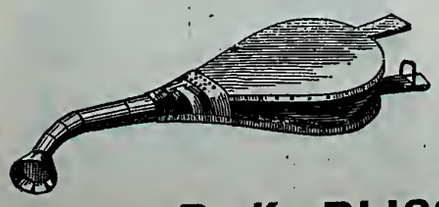

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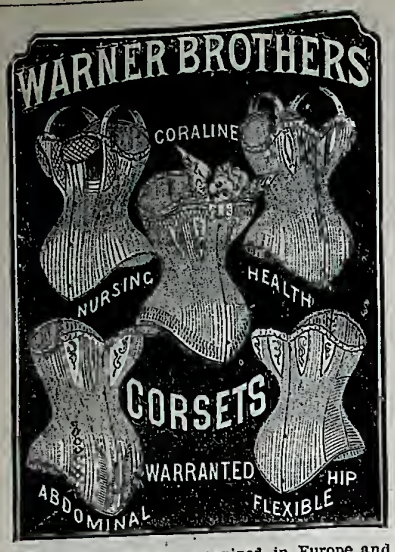

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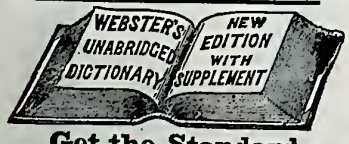

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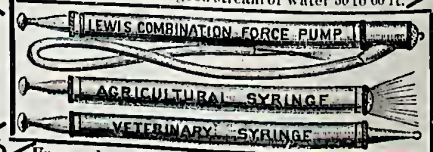

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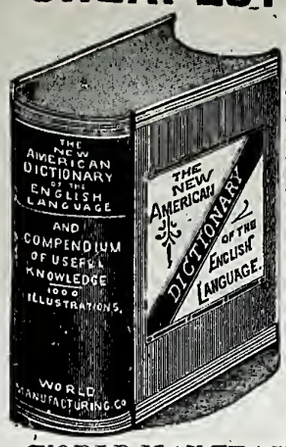

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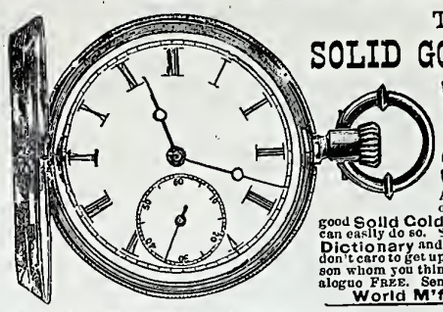

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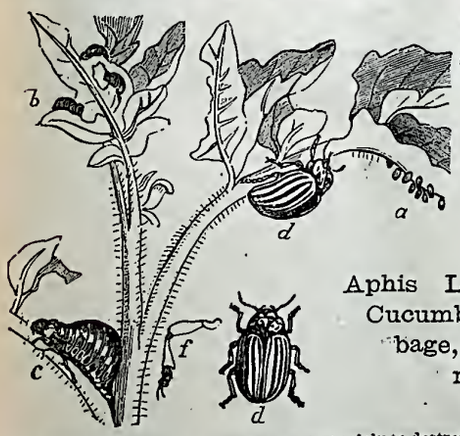

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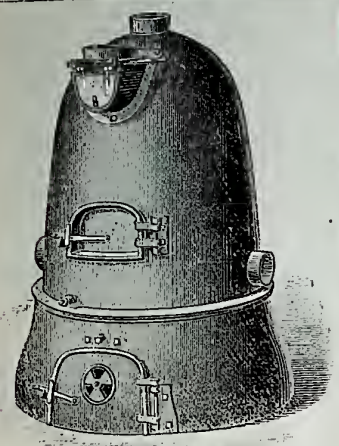

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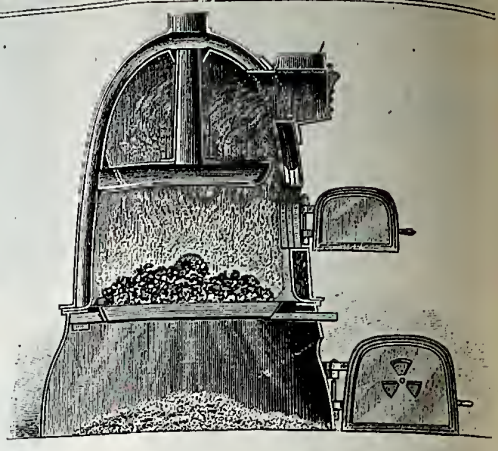

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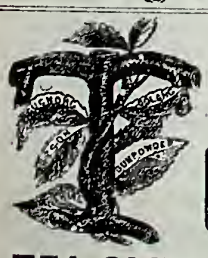

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

B. K. BLISS & SONS, Publishers.

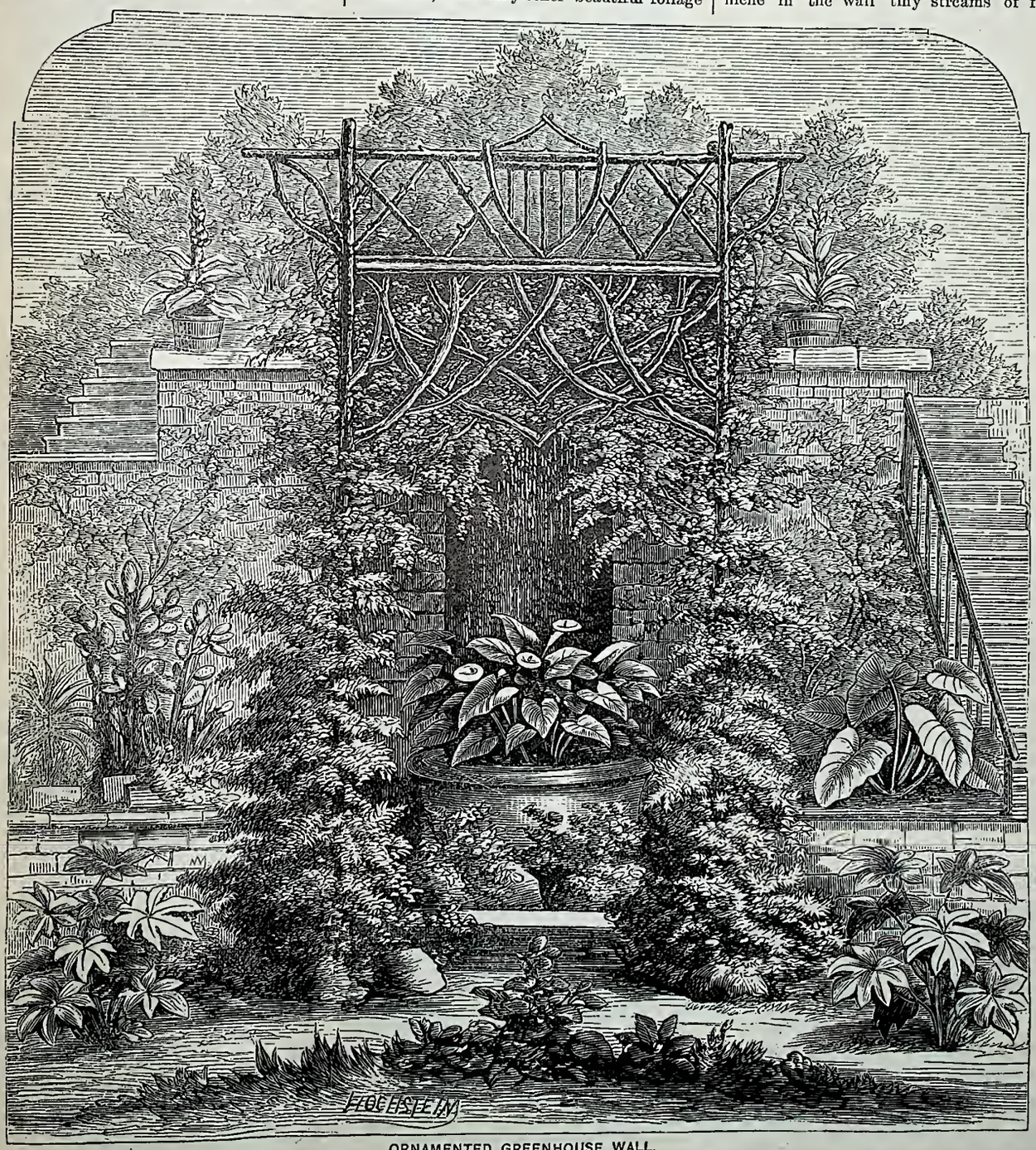
Vol. V. NEW-YORK, JULY, 1884. No. 7.

PICTURESQUE GREENHOUSES.

To the artistic arrangement of greenhouses there is yet too little attention given by amateur floriculturists. While a mere plant-house is built and arranged for the sole purpose of growing plants, the greenhouse proper — the conservatory — should at all times present a green and pleasing appearance instead of the familiar rows of red pots.

The pleasure that may be derived from a glass structure arranged as a miniature garden is infinitely greater than when the house is given up entirely to potted plants. Many large and beautiful subtropical plants, which could not be grown well in pots, in a moderate-sized greenhouse, may be made to thrive to perfection in such a glass-covered garden. The hardier Palms, Tree Ferns, Bamboos, Dracænas, and many other beautiful foliage and flowering plants can be grown in a temperate house.

The end walls of greenhouses present, not infrequently, the least inviting part of the whole, notwithstanding that there are but few instances in which these cannot be made a most attractive feature. Our illustration shows a very beautiful arrangement of this kind, which has been constructed in a conservatory near this city. In this case the wall was built for the special purpose of ornamenting it in this manner. Over the niche in the wall tiny streams of fresh water, brought from a spring on higher ground, are constantly trickling, and are gathered below in a miniature pond, which serves as an aquarium. On its margins various aquatic plants are growing in remarkable luxuriance, and produce a most striking and magnificent effect.



ORNAMENTED GREENHOUSE WALL.

The Vegetable Garden.

SEASONABLE HINTS.

Transplanting in Summer.—Many persons suppose that the most important point in setting out vegetable plants is to have the weather just right, regardless of the condition the plants are in at the time. That a damp, cloudy day is more favorable for transplanting than a dry and windy one, no one will dispute; but it is not prudent to let plants received from a distance, or such as stand too thick in the seed-bed, spoil while waiting for rain. It is astonishing how much drought and sun young Cabbage-plants can bear, provided they are of first quality and are set out carefully.

Plants that have been packed for several days will generally be found to have heated somewhat, in which case they should not be planted out at once into dry soil and exposed to the direct sun. They should be heeled in for several days in a damp, shady place, until they have fully recovered, and become fresh and green again. But it is of no use to take the whole bundles of fifty or a hundred plants and just cover them with a little soil. The bundles have to be opened, the plants spread out close together, and the roots carefully covered with fine soil, pressing it down firmly and adding more loose soil. In this state they may remain one or two weeks without injury; they will, in fact, improve all the time, and suffer no check at the final transplanting.

The Cabbage-worm.—After trying various devices for destroying this pest, our correspondent, *L. S. A.*, comes to the conclusion that "the true method for the destruction of the Cabbage-worm is to catch the butterflies with a net attached to a wire hoop two feet in diameter, and fastened to a stake six or seven feet long. With such an implement, a boy eight or ten years old can protect a field of an acre or more. The catching must be general, however, and operations must begin with the appearance of the butterflies in spring, thus cutting off the ancestry of an otherwise large progeny in July.

Cucumbers sown during the first week in July will produce Pickles fit for use about the middle of August, provided the ground is in proper condition. Planted as late as the 15th of this month, even, a good crop may be secured before frost. For pickling, the *Green Prolific* is the best variety, and the *Improved White Spine* for fresh use.

Cucumbers require a deep, rich, rather moist soil, and have to be kept scrupulously clean until the vines cover the entire ground. Pickling should commence as soon as there are any Pickles of proper size, say two to three inches, and be repeated every day, or at least every other day, through the season. It is fatal to the productiveness of the vines to leave those on that are too large or misshapen. A single Cucumber allowed to go to seed on a plant will soon end its bearing.

The Squash Borer.—A solution of an ounce of saltpeter in a gallon of water is recommended as a preventive against the Borer. As soon as the young plants appear above ground, the solution is poured over them in sufficient quantity to saturate the ground. This should be repeated three or four times at intervals of four or five days.

RAISING EARLY POTATOES.

Early in June, *Dr. E. H. C. Goodwin* left at our office some beautiful specimens of Beauty of Hebron Potatoes, raised by him at Governor's Island, in New-York bay. They were of marketable size and condition, and, at this season, something so remarkable that we were anxious to learn how they were raised. To an inquiry, the doctor obligingly replies:

"The Potatoes were planted in the open ground on March 29th, the thermometer between that date and April 1st falling as low as 25°. On April 8th the glass of the cold-pits was covered with ice, and the following day it snowed. The sprouts became visible above ground on April 16th, and on the 21st all were well up. The first digging was made on June 4th, and others occasionally till June 10th, with a total yield of over twenty bushels from a piece of ground fifty by twenty-five feet.

"Toward the end of February, I put the seed Potatoes in a shallow basket and set them in a rather warm room (say 60°), with plenty of light. By the time the ground can be worked they have made short, thick, dark green shoots, with rootlets showing. They are then cut to the proper size, dried or rolled in ashes, and planted with a pretty liberal application of ground bone and guano in the furrows. Should the season be too backward to allow the ground to be worked at the time the Potatoes should be cut,—which is apparent by the withering of the tubers,—the sets are placed in shallow boxes, with a little soil sprinkled over them. When the ground is in proper condition, the sets are planted out, at which time they have sometimes made roots an inch long.

"If there is danger of severe frost after the vines have appeared above ground, I cover them with soil, which operation serves as a first hoeing at the same time; but a slight frost does not injure them. They are then worked and hilled in the usual way. The bugs are not likely to attack them, as the vines have made nearly their full growth before the larvæ make their appearance. To guard against frost, a mulching of straw might be applied, which need not be removed afterward, and, if heavy enough, would save all after-cultivation.

"Although I have tried this method only on a small piece of ground, I see no reason why market gardeners near large cities could not make it profitable on a larger scale."

TURNIPS.

For a number of years I had not succeeded with my Turnip "patch." The Turnips were either too small, some too thick, or so bitter as to render them unfit for the table. My hay crop fell short one season, and I concluded that I must raise some kind of root crop in order to make the "fodder" last until spring, as I did not care to dispose of any of my stock. The question arose, where should I find a suitable place to plow and sow the seed.

At the south end of my wood-lot, in one corner, was a clearing perhaps containing three-quarters of an acre of ground. Formerly the spot was covered with a thick growth of White Oaks, and the stumps could now be seen on every hand. The soil, however, was well turfed, although it had not been plowed, no doubt, since the trees were cut, some thirty years or so. I concluded at length to try and see what kind of a patch it would make, and so early in July plowed the corner and fenced it in (as I pastured the lot), harrowed the soil well, and when the time came to sow the seeds, about the twenty-fifth of the month, I gave the entire piece a liberal dressing of manure made very fine, dragged it in, sowed the seed (Yellow Globe), and waited for the result.

They came up finely, and I saw at once that I was to have a good Turnip patch for once. I now went over the entire piece, and pulled up all those in bunches, or where too thick, and so had the young Turnips about the right distance apart. They came on, and grew rapidly, and now and then we had showers, so that the soil was sufficiently moist for the Turnips, and a steady and uniform growth was kept up all of the time. It was real pleasure to watch their growth. The soil was very rich of itself, without adding any sort of fertilizers; and so the Turnips grew until frost came, and the oxen were hitched on to the cart and driven to the patch. We commenced at one corner, and after working for several hours pulling and cutting off the tops, we could not see that we were making a very large "hole" in the piece, as the boys would say. They were very large, but quite uniform, owing, in part, no doubt, to our thinning them out early in the season.

But it is the flavor that we desire to speak of, and I think I may say that the old negro cook was right when she said of them: "Dey's jis sweet as honey." I do not recollect of finding a bitter one in the whole lot, so that the crop was particularly valuable for marketing. I sold many bushels of them in all the towns around, and put in my cellar two hundred and fifty bushels of as nice eating and feeding Yellow Globe as ever grew.

Now, what was the secret of my success? There was simply no secret at all about it. I chose the right soil; new land always, if you wish for sweet Turnips. I had a good crop, and what I sold brought me good prices. Now, bitter Turnips may be just as good for stock, though I would rather have sweet ones, and the crop may be just as large; but if the crop is short all around, and the market is bare, you cannot supply the demand unless the roots are fit for the table.

E. R. BILLINGS.

A PLEA FOR COLORED BEANS.

An article on "White Beans" in a previous number of THE AMERICAN GARDEN suggests a good word for the colored or speckled sort, often called "Six Weeks Bean," as it comes forward very early.

Those red-eyed or speckled Beans are very delicious, cooked in the same way as white Beans, and much richer. They are best when parboiled, and the water changed. It is true they retain their color, but that does not injure even their looks, and they only need trying to become a favorite dish.

The small black Beans that we call "Mock Turtle Soup Beans," are, perhaps, still better, although we have only used them for soup in the same way as split Peas, boiling thoroughly and changing the water more than once, then squeezing or straining them through a colander. Both those varieties are decidedly better for winter use than Lima Beans.

S. H. H.

MUSHROOM CULTURE.

Of all the edible Mushrooms, the common Meadow Mushroom (*Agaricus edulis*) is the only one adapted for culture, and, with proper care and management, it can be grown almost anywhere and at all seasons. Nowhere has the cultivation of this delicacy reached so high a state of perfection as in the vicinity of Paris, in France, and the following description of the methods practiced there, given by Messrs. Vilmorin-Andrieux, will, therefore, be of interest to those who contemplate Mushroom culture:

The chief conditions to obtain a satisfactory result consist in growing Mushrooms in a very rich soil and under a genial, as nearly as possible even, temperature. To secure this latter condition, the culture is often carried on in cellars; but any other locality, such as sheds, outhouses, stables, railway arches, etc., will suit as well, provided that either naturally or by artificial means the temperature does not exceed 86°, nor fall lower than 50° Fahr.

The first thing to be considered after the choice of a convenient locality is the preparation of the Mushroom bed. The most essential material being horse-droppings, preference to be given to those of well-nourished animals, collected as dry and as free from straw as possible. This fermenting material would be too hot to be used by itself at once; to reduce the strength it should be well mixed with one-fourth or one-fifth of its bulk of good garden soil,

TUB.

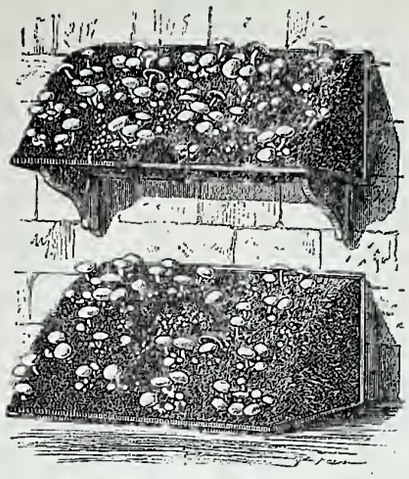
when the bed may be prepared immediately, the fermentation being slow and the heat produced only moderate and even. Care should be taken to construct the bed in a dry place, and to make the sides firm and tidy.

If it is intended to use the horse-dung by itself, as the Mushroom-growers around Paris do, it is necessary to allow the first heat to evaporate, which is done by piling the droppings as they come from the stable in successive layers to the height of about three feet, in a dry spot, removing all foreign matter from it and pressing it into a compact mass, sprinkling with water such portions as are very dry. In this state it is to be left till the most violent fermentation has passed, which is generally the case in six to ten days, when the heap is to be re-made, taking care that those portions which were *outside*, and consequently less fermented, are placed *inside*, to insure an equal temperature. It should be well mixed and firmly placed, so that the whole may be of a similar texture.

Generally, a few days after being re-made, the fermentation is so strong as to render it necessary to be made up a third time.

Sometimes, after the second operation, it is ready for the beds being made, which may be seen when the heating material has become brown, the straw which is mixed with it has lost almost entirely its consistence, when it has become greasy, and the smell is not longer the same as when fresh. It is difficult to obtain a good material without preparing a heap of at least three feet each way; and if that quantity is not required for making the beds, the surplus may with advantage be used in the kitchen-garden.

The material is now brought to the place where the beds are to be made, which may be of any form and size; but experience has shown that the best way to make use of

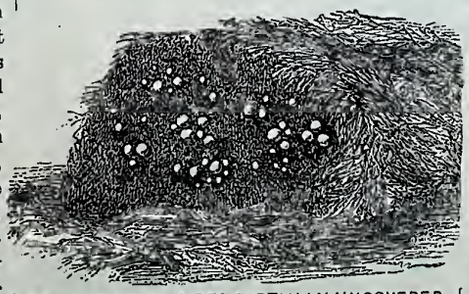


MOVABLE BEDS AGAINST A WALL.

space and material is to raise the beds to a height of twenty to twenty-four inches, with a width of about the same at the foundation. An excessive rise of the temperature, in consequence of renewed fermentation, is to be less feared than when the beds are of larger dimensions. When a large place is at disposal, preference is given to beds with two slanting sides; when the beds are resting against a wall, and consequently present but one available side, the width ought to be less than the height.

Barrels sawn in two, so that each part forms a tub, are well adapted to form beds, as well as simple shelves on which sugar-loaf-shaped beds may be raised, which, already formed, may be carried into cellars, etc., where the introduction of the raw materials would be objectionable.

The beds thus established should be left for a few days before spawning, to see whether the fermentation will not be renewed with excessive vigor, which may be ascertained by the touch of the hand, but it



BED WITH TWO SIDES PARTIALLY UNCOVERED.

is safer to use the thermometer; as long as the temperature exceeds 86° Fahr. the bed is too hot, and it should be allowed to cool by itself, or by making openings with a stick to allow the heat to escape.

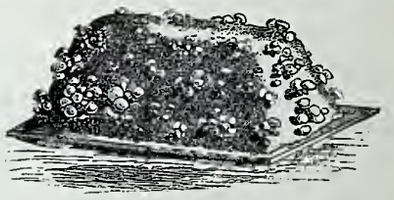
When the temperature remains at 76°, it is time for spawning. Prepared spawn is found in the seed stores at all times, which may be kept without trouble from year to year. The spawn sold in France is not in bricks or solid lumps, as in England, but in light masses of scarcely half-decomposed loose and dry litter.

A few days before spawning, it is advisable to expose the spawn to a moderately warm moisture, which will insure a safer and more rapid growth; it should be broken up in pieces about the length and thickness of the hand by half that width, and inserted into the bed at a distance of ten to twelve inches each way; on beds twenty to twenty-four inches in height, which are mostly in use, it should be inserted in two rows, dovetail fashion.

Where the bed is situated in a place under cover and of an even temperature, nothing else is to be done but to wait for the growth; if, however, the bed is placed in the open air and exposed to change of the weather, it must be covered with long litter or hay to keep a uniform temperature all around the bed.

Under favorable circumstances, and if the work has been done well, the spawn ought to show activity in seven or eight days; it is advisable to look to it, and to replace such spawn as might not thrive, which can be seen by the absence of white filaments in the surrounding material.

Fifteen to twenty days later the spawn ought to have taken possession of the whole bed and should come to the surface; the top and sides of the bed should then be covered



MOVABLE SHELF.

with soil, for which a light mold in preference to a heavy one should be used, slightly moistening it, without making it too wet. If it does not naturally contain saltpeter, it would be good to administer a small quantity of salt or saltpeter, or to give it a watering of liquid manure.

The covering with soil should not exceed more than an inch in depth, and be pressed strongly so as to adhere firmly; watering should only be done when the soil becomes very dry. Where a covering has been removed for some purpose it must be replaced at once.

A few weeks after, according to the state of temperature, more or less, the Mushrooms will appear. In gathering them care should be taken to fill the empty spaces with the same soil as used for the covering. Leaving the bed to itself, it will produce from two to three months; but its fertility may be prolonged by careful waterings at a temperature of 68° to 86° Fahr., with an admixture of guano or saltpeter.

By establishing under cover three or four beds annually in succession, a continued supply may be reckoned upon; besides, during the summer months, beds may be raised out-of-doors at very little expense, securing an abundant supply. Frames in which vegetables are forced may in the intervals be used for Mushroom culture with very good results, providing the temperature be congenial, and that the young Mushrooms are slightly protected with soil as soon as they appear.

The Fruit Garden.

SEASONABLE HINTS.

During the past month some of our readers have, no doubt, reveled in the enjoyment of an abundance of Strawberries, and have ample reasons to be satisfied with their well-cared-for Strawberry beds; a large number, however, we fear, have fared scantily, and are now meditating how best to avoid a similar deficiency another season. We have written about this subject repeatedly, and should not recur to it again had we not several inquiries about it on hand; and as this column is mainly conducted in the interest of beginners, we will tell them how to have plenty of Strawberries next year.

Preparation of the Ground.—As soon as the location of the bed or row has been determined upon, a heavy coat of yard manure—decomposed is best—should be thoroughly incorporated with the soil, by plowing or spreading it under. If the ground is heavy and full of weed seeds, which is unfortunately too frequently the case, it should be turned over again once or twice before planting, loosening and mellowing it at the same time.

Planting in Midsummer.—If the plants to be used are growing on the place, select, if possible, a day when the ground is moist; then with a spade or a large trowel dig out the young plants singly with as much soil attached as can easily be handled; transport to the new location and let the whole clump slide into the holes previously dug for the purpose, fill in the interstices with mellow soil, press firmly, and if dry give a thorough watering. With ordinary care, not a plant in a hundred so transplanted need fail to grow. But when plants have to be procured from a distance, this is not practicable, and ordinary ground-layered plants are at this season so tender and delicate that considerable loss, if not entire failure, results from their use in summer.

Potted Plants come to our aid in this emergency and furnish ready means for planting Strawberries at this season, with hardly any risk of loss. These are simply young plants or runners which, instead of having been permitted to root in the ground, had small flower-pots, filled with soil, placed under them, so that all their roots remain confined within the pot, forming a compact net-work, a ball of roots. About three weeks after the runners have been layered in the pots, they are in the best condition for transplanting. They are then detached from the parent plants, kept in a partly shaded place for a few days, and well supplied with water. When wanted for shipment, they are carefully shaken from the pots, the balls wrapped in papers, and all placed in a box. When received, they should be planted without delay, by digging holes somewhat larger than the ball, sinking this level with the ground, filling in and pressing the soil firmly. If the roots are found to be much netted, it is best to break the ball before planting, by crushing it with the hand. In very dry weather, they should be watered until well established. Good potted plants set out in the latter part of this month, and properly cared for, will produce an abundant crop next year, provided all runners are promptly cut off before they have taken root.

SUMMER PRUNING FOR FRUIT TREES.

There is a great tendency for sap to force itself to the topmost branches of a tree, which induces a rank growth of tender, watery shoots from these topmost boughs. Unless this is checked, the growth is mainly upward, and the largest share of the nourishment of the tree will, of course, go up into this new growth, leaving but a comparatively small amount to develop and ripen the fruit on the lower branches. This tendency is particularly noticeable in the Grape-vine.

Where the vines are allowed to follow their natural inclination they will climb to the tops of the highest trees, perhaps, and all that immense length of stem from the ground to the top but serves as a carrier for the nourishment that is demanded by the top. They may fruit luxuriantly after they have reached the top of their support, but not a branch or a twig, or a bunch of berries will you find on that long stretch of stem. Now, this same vine might have been trained over a six-foot trellis, where it would have borne more and better fruit within easy reach of the grower. If you want small, wild Grapes, let your vines go unpruned, and you will soon have them—by climbing for them. This tendency to upward growth to the loss of the lower branches is more noticeable in the Grape-vine than in the Apple-tree, but it is the nature of all tree growth, and it must be checked, or the rank shoots will surely rot the fruit stems.

The healthy growth of the lower branches and the successful ripening of the fruit depend upon the proper return-flow of the sap from the extremities. Long-continued damp, cloudy, and wet weather will sometimes induce an extra growth of wood that absorbs this sap to the drainage and loss of the fruit clusters. If these shoots are nipped off in the summer, the flow of sap is checked and thrown back to the lower branches. The excessive wood-growth is checked by the same means, and the tree kept in proper form. The tree is kept in a uniformly thrifty condition which will enable it to withstand the severe winter much better than if there were a rank growth in one part, gained through a lack of nourishment and consequent vitality of another part.

Early summer is the most effective time of all the year for pruning. The immediate fruit crop may be increased and improved, and the tree kept in a uniformly thrifty condition. This slashing out of large limbs in the fall and winter is not the thing to my mind. Where a limb is cut off *before* the sap goes up, the rising sap will cause a number of shoots to spring out around the end—just like root sprouts that come up around the stump of a tree that has been felled in winter; but if pruned *after* the leaves are out, such growth will not occur.

I do not believe in severe pruning at any time, but I believe in pruning a little every year, so that excessive pruning will not seem necessary. The pruning should never be allowed to get beyond the reach of the jack-knife. When I see a man sawing and chopping out the top of a tree I know that the pruning fever strikes him about once in every decade. Such pruning is worse than no pruning.

Some follow the practice of pruning every fall, and I have often wondered how they could fail to see the absurdity of producing such an over-growth in the summer, just for the sake of cutting it away in the fall. The only way that we can avoid this waste of wood and hacking of trees is by judicious summer pruning.

After a fruit tree has attained a good fair size and form, all further wood growth should be discouraged by nipping back the most forward shoots, especially those that are pushing out from the top.

W. D. BOYNTON.

MAKING APPLE-TREES BEAR EVERY YEAR.

In many parts of the country, Apple-trees yield a crop of fruit only every alternate year, the year represented by an odd number, (1879) being barren, while that represented by an even number (1880) will be fruitful. In other places, orchards bear every year. Some trees will yield fruit only every other year, while others near them, on every side, will produce a bountiful crop.

Two seasons are required to produce a crop of Apples, that is, during one season the fruit-buds are developed, and during the next, the fruit. All the vital energies of some trees are employed, during one season, to develop the fruit-buds; then the year following, their entire vitality seems to be spent in developing the fruit, without sufficient force being left to form fruit-buds for the crop of the next season.

Now, in order to induce an Apple-tree to bear every season, climb into the top, or go up on ladders, just as one does when plucking the ripe fruit, and with a pair of sharp shears clip off all the young fruit from about half the tree. Then fruit-buds will form on that side of the tree from which the young Apples were cut off. One-half the top, then, will bear fruit one year, while the other half will yield fruit the next season.

S. E. T.

REMEDY FOR CRACKED PEARS.

If any one has a Pear-tree that bears spotted or cracked fruit, says Croppie, in the *New-York Tribune*, let him sprinkle wood ashes freely over the soil beneath the tree, as far in diameter as the branches extend—not a light sprinkle, either, but a liberal dressing. Then wash the bark thoroughly with strong soap-suds (old-fashioned soft-soap preferred), with the addition of lime-water, and a little flour of sulphur. I had a white Doyenne Pear-tree treated in this way, that previously bore only imperfect fruit, but which after treatment gave some delicious highly colored specimens. It may not cure in every case, but it will do no harm.

HARDY BLACKBERRIES AND RASPBERRIES.

Charles A. Green, editor of *Green's Fruit Grower*, found on his fruit farm, near Rochester, N. Y., that, among Blackberries, Stone's Hardy is the hardiest; Snyder next, Taylor and Wallace next, Agawam next, Wachusett next, then Kittatinny and Lawton, down to Brunton's Early, Early Harvest, and Crystal White, the last five dead to the snow line, except where protected by the timber. Stone's Hardy, Snyder, Taylor, and Wallace are all hardy enough for this locality. Wallace is the largest and best in quality of the hardy Blackberries.

Among Red Raspberries, Marlboro, Cuthbert, Turner, and Lost Rubies are hardy with him. Shaffer has suffered some for the first time, yet it stands the winter in Iowa.

NECTARINES.

Nectarines require about the same culture and general management as Peaches. The principal difference between them is that the former are entirely smooth, as much so as Plums. The greatest difficulty about their cultivation is that they are so peculiarly liable to the attacks of the curculio, and unless one is willing to give unremitting attention to them during the season this pest abounds, it is useless to attempt the cultivation of Nectarines.

But the greatest value of this fruit consists in its adaptation for forcing under glass; and for training in espaliers on the back wall of cold graperies, it is specially suited. For growing in pots the Nectarine is a great favorite, as it will bear very young. If properly managed, a tree growing in a twelve or fifteen inch pot will, when three years old, produce several dozens of fruit. For a dinner-table decoration, nothing prettier and more appropriate can be imagined than such a tree in full bearing, its branches bending low under their weight of luscious fruit, and inviting the guests to help themselves to the tempting dessert thus offered.

MARKETING FRUITS

The marketing of a crop is just as important a matter as the production of it. As profit is the margin between cost of production and sum obtained, smallness of sum realized will reduce profit as effectually as largeness of cost of production. The farmer and stock-raiser know this, and take advantage of means to increase the salability of their products; but I find that too often the fruit-grower overlooks this important point.

The fruit-grower labors under this disadvantage: He must, to a considerable extent, create a demand, a market, for his product; that is, often to realize a profitable price in a sure market, he must establish for his fruits a reputation that will create a demand for them among consumers. In establishing this reputation, the first point to be observed is perfect honesty in packing. The measures must be of full size. A quart must be two full pints, and a peck eight such quarts. Boxes must not have deceitful bottoms, or barrels be two inches short or without bulge. Then the fruit must be honestly packed in these honest measures. By no means allow the nicest to shake to the top. Let the fruit be uniform throughout.

For this reason, Peaches, Pears, Apples, etc., should be assorted. The small ones will bring as high a price as the mixed lot, while the large ones will bring a higher price. Care must be taken in picking and handling all fruits easily bruised, as wherever they are bruised they will rot, and then rot all in contact with them.

When you have thus carefully handled your fruit, and have honestly packed it in honest measures, put your name and address upon every package in bold-face type. If you are ashamed to own the packages, you would better quit fruit-raising; you will never establish a profitable market. But with your name on the right sort of a package, holding the right sort of fruit, you will; for consumers will want what you have, and know where to get it.

Do not consign to half a dozen different commission men. Buyers want fruit always of an even grade with which to fill their contracts; your fruit will grade more evenly than a combination from half a dozen different sources; therefore, they will want to buy your entire lot. But if you have consigned to half a dozen different men, you will be made to compete with yourself; for the buyer will so manage matters as to bring all down to the lowest price of any. If you consign to but one man, and he knows it, he will hold your fruit at a stiff price; for he knows the buyer cannot purchase it at a less price elsewhere.

For the same reason, association of the fruit-growers of a neighborhood is beneficial to all; for the fruit of a neighborhood will grade evenly, and if all the fruit-growers in one neighborhood will combine to establish a good reputation for their collective production, and ship to but one commission merchant, they will realize a higher price than they would otherwise do. They will also get better facilities and rates for transportation, for the railroads give better rates to large shippers than to small ones; and all taken from the cost of transportation is so much added to the profits.

THE NECTARINE.

While it is dishonest to hide the defects in fruits by putting only the best where they can be seen, it is perfectly right to better the appearance of fruit and make it as attractive as possible. Retail buyers look more at the outside of the fruit than the inside; that is, they consider appearance always, but rarely quality. Of course, those who buy to sell to them must do the same. Fruit-growers could learn a valuable lesson of the fruit-stand keepers on the street corners of our cities. As they open up their stands in the morning, they rub every Apple and Pear till it glistens. Send your fruit to market clean and in clean packages. Little items which I dare not take space to mention, but which will occur to your mind, add to the attractiveness of fruit and enhance its price. Even the color of the netting used to cover berries should be considered; have it of a color complementary to that of the fruit. Boxes and crates should be neat and clean.

Packages should be of as good material as can be afforded. They should be firm, that the fruit may not be bruised in transportation. The bottom should be thick enough to make the package solid.

Fruit should be picked as soon as in marketable condition. Every day's delay after this period diminishes its value.

JOHN M. STAHL.

The Flower Garden.

MIDSUMMER.

BY JOHN G. WHITTIER.

Around this lovely valley rise
The purple hills of Paradise;
Oh, softly on yon bank of haze
Her rosy face the summer lays!
Becalmed along the summer sky
The argosies of cloud-land lie,
Whose shores, with many a shining rift,
Far off their pearl-white peaks uplift.

Through all the long midsummer day
The meadow sides are sweet with hay;
I seek the coolest sheltered seat
Just where the field and forest meet—
Where grew the Pine-trees, tall and bland,
The ancient Oaks, austere and grand,
And fringing roots and pebbles fret
The ripples of the rivulet.

I watch the mowers as they go
Through the tall grass a white-sleeved row;
With even strokes their scythes they swing,
In tune their merry whetstones ring;
Behind, the nimble youngsters run,
And toss the thick swathes in the sun;
The cattle graze—while warm and still
Slope the broad pastures, hasks the hill;
And bright when summer breezes break
The green Wheat crinkles like a lake.

The butterfly and bumble-bee
Come to the pleasant woods with me:
Quickly before me runs the quail,
The chickens sulk behind the rail,
High up the lone wood-pigeon sits,
And the woodpecker pecks and flits;
Sweet woodland music sinks and swells,
The brooklet rings its tinkling bells.

The swarming insects drone and hum,
The partridge beats his throbbing drum;
The squirrel leaps along the boughs,
And chatters in his leafy house;
The oriole flashes by—and look
Into the mirror of the brook
Where the vain bluebird trims his coat,
Two tiny feathers fall and float.

As silently, as tenderly,
The dawn of peace descends on me;
Oh, this is peace!—I have no need
Of friend to talk, of book to read;
A dear companion here abides,
Close to my thrilling heart he hides;
The holy silence is his voice;
I lie, and listen, and rejoice.

SEASONABLE HINTS.

Although the principal work of sowing and planting in the flower garden is finished at this season, there are many annuals that may still be sown to good advantage. Mignonette, Sweet Alyssum, Candytuft, and many others sown now in good mellow soil, and watered in dry weather, will give an abundance of flowers all through autumn.

Bedding Plants of various kinds may also still be planted, and will, where circumstances have not permitted earlier planting, richly repay the trouble and expense. One of the most pleasing and effective *Ribbon Beds* we have ever seen for the outlay was planted on the fifth of July.

The center consisted of seven Cannas, the circle surrounding these of six *Salvia splendens*. Then followed twelve *Coleus Verschaffelti*, then twenty-four Scarlet Geraniums, edged by the outer ring of forty-eight Alternantheras. The ground was, of course, in the best condition; but all autumn the brilliant Salivas formed a striking contrast against the rich green foliage of the Cannas, and the Geraniums harmonized pleasingly with the Coleus and Alternantheras.

CANNAS.

These plants derive their popular name of Indian Shot from the hard, round, black seeds of the typical species *Canna Indica*. As both the scientific and the common name show, it is a native of India, but has for many years been naturalized in all tropical countries. In Brazil far up the Amazon valley, we found deep in the woods a large field of this plant. Though far from any house it probably marked the place of an abandoned garden; but the strange thing was that, although we searched for it, we never saw a plant in any garden within a hundred miles of the spot.

This plant is now seldom grown as it has been supplanted by more showy species. A few years ago, with the growing taste of subtropical gardening, Cannas became very popular and many new species were disseminated. Their easy culture and rapid growth commended them, and the size and rich, varied luxuriance of their foliage caused them to be

CLUMP OF CANNA.

planted wherever masses of effective foliage were required.

They are all easily raised from seed, which germinates soon if scalded previous to planting or if sown in a brisk hot-bed. If sown in the open borders the seed lies long in the ground, and the plant has time to make but little growth before autumn. As soon as the plants are two inches high, if the weather is warm, say about the first of June, plant them in the positions they are to occupy. Let the soil be very rich—it can hardly be too rich—and let the situation be where the roots will not dry. Water may be given freely and liquid manure is beneficial. The plants thus treated will grow rapidly, and soon be effective.

But it is not from seed that the superb masses of foliage which one sees in gardens are produced. The Cannas form large thick root stocks, and these are taken up when the frost has killed the tops, and kept in a dry, frost-proof cellar until spring. They are planted in a frame or potted, and later are transplanted to the garden where they grow with wonderful luxuriance. At first Cannas were valued only as foliage plants, but latterly some species which combine noble foliage with showy flowers have been produced.

The latest novelty is *Canna Ehmanni*, a variety of the old, scarce, but very beautiful, *C. iridiflora*. The foliage is broad, rather light-green, and the flowers are rich red, and as large as a Gladiolus.

For a choice selection, well contrasted in color, we should select *Bikerelli* with scarlet flowers and brown leaves; *discolor violacea*, very tall with splendid dark foliage, but a shy bloomer; *Rendatleri*, glaucous foliage, large canary-yellow flowers; *Warscewiczii*, dark, striped leaves, red flowers; *Marechal Vaillant*, tall, dark green with orange flowers; *Annei*, crimson flowers, green leaves; *Sellowii*, scarlet and green; *Depute Hernon*, with orange and yellow flowers. There are many species and a host of seedling varieties, and a large selection both in seeds and roots can be found at seed stores, almost any of which will be worth a place in the garden.

E. S. RAND.

SLUGS IN GARDENS.

Our dry, hot summers are not as genial to the development of these garden pests as the damp atmosphere of England; yet several inquiries from readers of THE AMERICAN GARDEN seem to indicate that they are on the increase in some localities. A subscriber writes: "A slimy, creeping snail is very destructive to my plants; how can I destroy these insects?"

Well, in the first place, a snail is not an insect, but a mollusk; and, in the second, the animals which destroy your plants are, properly speaking, slugs. The garden snails of Europe (*Helix hortensis*) do not exist here. There are a few species of this genus found here in damp woods, but they are never seen in sufficient numbers in our gardens to do any damage. The term snails, as commonly used, comprises all land mollusks with shells or houses; while under slugs are understood all land mollusks without shells.

In English gardens slug-hunting is among the most important routine operations, and a method which is found as satisfactory as any is to go along all the walks of the garden each evening with a bag or bucket full of bran, and place a handful of it on the borders, at every eight or ten feet, in a heap. Slugs are very fond of bran, and it seems to attract them from all quarters, so that the heaps are soon found covered with them, often a complete mass. Early next morning traverse the same ground with an empty bucket, a dust-pan and small broom, sweeping bran and slugs into this dust-pan and emptying all in the bucket. By the time the circuit has been completed many hundreds, if not thousands, are thus captured. By throwing some salt in the bucket they may be killed in a very short time.

Another plan is to lay Cabbage-leaves, upon which some fresh lard has been spread, near the plants in most danger of the depredations of the slugs. This is done in the evening, and early next morning most of the slugs near by will be found under the leaves. They may then be scraped off and destroyed, and by keeping the leaves in a cool, shady place during the day-time, they may be used for many nights.

THE CORAL PLANT.

Erythrina.

These showy shrubs, although natives of warmer climates than ours, will bloom well if planted outdoors in rich, sunny borders, in early summer, but not before all danger of frost is over.

E. Crista-galli, indigenous to Brazil, is the best known and most beautiful species, and as a specimen plant in a flower-bed or singly for the lawn, it can hardly be excelled. Why this superb plant should not be seen more frequently in private gardens can hardly be accounted for, except that it is an old plant, out of date, one which in the race for novelties has been left behind and forgotten. Its appearance is very distinct, the large coral-red, peculiarly shaped flowers, contrasting sharply with the handsome, glossy leaves, in the axils of which they are produced in great abundance. A large, well-grown specimen is a sight to be remembered.

In our Southern States the plant may be left outdoors during winter, and will not suffer, if light protection is given; but it is very important that the bed should be well drained if the ground is at all of a retentive nature. The soil should be moderately rich and light, although the plant is not very partial to any special soil, provided it is well supplied with water during its season of growth and blossoming. Before sharp frosts occur the entire clump has to be lifted, cut back, and planted in a box or pot large enough not to unduly crowd the roots. They may be wintered with safety in a frost-proof cellar or moderately warm room and come out all right in spring, but care must be taken to keep them only moist enough to prevent them from shriveling. The roots, after having been taken up, may also be preserved by covering them with dry sand, similar to keeping Dahlias.

E. Hendersonii is a variety of recent introduction, which, although its flowers are a little smaller than those of *E. Crista-galli*, blooms more profusely, and has the additional merit of flowering much earlier, and continuing in bloom for a longer period. It seeds freely, and seed sown in heat early in the season will produce flowering plants the same year, so that it may be grown as an annual plant.

THE CORAL PLANT.

GROWING BEAUTIFUL PANSIES.

Much as has been written lately about "how to raise Pansies," but little information is given as to how the very finest flowers and most beautiful colors may be produced. Having had unusually good success with my Pansies, my method may interest some of the readers of THE AMERICAN GARDEN.

I plant the seedlings in ridges about eight inches apart and fill up the trenches with cow manure, made thin enough to run. As soon as the plants commence to make a good growth I construct my watering apparatus. This consists of an old barrel with a false bottom, through which several holes have been bored, nailed about half-way down. At the bottom of the barrel is fastened a short piece of an old bamboo fishing-rod, to which a rubber pipe of the necessary length is attached. The end of this pipe is connected with another and longer piece of fishing-rod, through which holes have been bored so that the liquid drips evenly between the rows of plants. This dripping piece or pipe is placed on two forked sticks and moved from time to time so as to keep up a uniform moisture in the bed. When all is ready, cow manure is placed in the upper part of the barrel, and all filled up with water, pouring on more water as the liquid manure is drawn off from below. The cask is placed behind a fence, where it is hidden by shrubbery so as to be in nowise unsightly or objectionable.

When the apparatus is once constructed, there is hardly any labor in its use; it takes care of itself, and to convince any one of its efficiency it only needs a trial. I have no doubt that larger and better Pansies can be raised in this way than in any other, and I certainly led our city in beautiful Pansies, raised from THE AMERICAN GARDEN Premium seed.

SAMUEL DENNY.

VERBENAS.

For low beds on the lawn in front of the sitting-room windows, or near the paths, the Verbena is my favorite flower on account of its profuse blossoming and its brilliance of color. A good bed of Verbenas is a sight worth seeing any time, and has some points of merit superior to a bed of Geraniums. Like the Phlox, the Verbena succeeds better with me in a moderately rich soil than in a very rich one. The former seems to be productive of more flowers, the latter of ranker growth.

Verbenas may easily be raised from seed, but for some reason I have not succeeded in raising fine ones from seed. Most of my seedlings produce mauve and pink flowers, and have a coarse appearance. I prefer to buy my plants of the florist. I set out the plants in the beds as soon as the weather becomes really warm, not before, and peg the branches down by bending little twigs into the shape of a hair-pin, and inserting the ends in the earth over the branch. At each point roots will soon be found, and new plants can be raised in large quantities by this process.

The new plants will soon begin to bloom, and a plant is never without flowers through the season, if seed is not allowed to form. For every branch cut off, two will start from the axils of the leaves below, and these will soon produce flowers. It is very easy, therefore, to increase the blossoming surface, by cutting the plant in well, from time to time. Removing fading flowers regularly will produce this result, and will also extend its blossoming season far beyond its usual limit.

E. E. REXFORD.

The Window Garden
AND GREENHOUSE.

ECONOMICAL PROPAGATION.

I have a greenhouse which is fitted up for helping and forcing early salads and some vegetable plants, as an auxiliary to the hot-beds, to be used during the first months of the year, when hot-beds are hard to manage successfully. Having a love for plants, I naturally made the greenhouse the receptacle for such house-plants as could not find room in the living-room windows, and which would not keep well in the cellar.

Toward spring, the increasing of my stock of common and half-hardy bedding-plants of the varieties most sought after was attempted, and I have, since that time, divided the heat and accommodation of the greenhouse with the best success with both plants and vegetables. During early winter the vegetables occupy most of the room, leaving only a sand-bed over the furnace for cuttings, and the space just beyond for stock-plants and the propagation of cuttings, and for seedlings.

As spring advances, the vegetables give place to the flowers; while, in May and June, all the vegetables are transferred to outdoor culture, and the house is full of plants alone. After the first of July, all the plants left on hand, together with those previously saved for stock-plants, are placed in the open ground.

Geraniums, Heliotropes, Petunias, Fuchsias, Salvias, Verbenas, and Pansies are most in demand, and as they will grow in a low temperature, are found most profitable for an amateur florist. Pansies, Stocks, Phlox, Asters, Marigolds, Nasturtiums, and Petunias I raise from seed early enough to have plants in bloom during May and June. Verbenas I raise from seed in preference to cuttings—buying seed of the choicest kinds only, and from reliable sources.

The seed is sown in December, and comes mostly true to name, and produces much nicer plants for bedding than those raised from cuttings, and the seedlings do not suffer from the green fly in the low temperature, as cuttings do. I force them rapidly into bloom in two-inch pots after the first of April.

Fuchsias I propagate from cuttings taken during the summer months, and rooted in separate pots of earth on the north side of a tight fence. This keeps them shady, and if kept well watered the cuttings will be handsome little plants, ready to be lifted in the pots at the first indication of frost in the fall. Early cuttings in the greenhouse in the fall make little winter growth. The summer-grown ones remain dormant on the benches till forced forward by warm, spring weather.

Heliotrope, carefully lifted and potted in September, will have made a new growth for cuttings about Christmas. When these cuttings are potted off, later on, the top is cut off, which makes the plant branching and stocky, and the cut-off tops may be used for propagation again. Salvias and Petunias, such as I wish to propagate, are preserved by cuttings made before hard frost. The stock-plants I leave to die. Choice double Petunias are saved and perpetuated best in this way. Geraniums are cut down for cuttings before frost, and the cuttings placed in the greenhouse with those of the Petunias and Salvias. Later, the stock plants are lifted for larger bedding-plants the following year.

The management of cuttings and plants, after they are safe in the greenhouse, may easily be learned by any one who gives his mind to it, and will remember what he learns. But I have generally more pleasure and better success with seedlings than with cuttings of plants which grow readily from seed. It is a very rare occurrence that plants grown from first-class seed do not prove satisfactory.

W. H. Bull.

PERPETUAL PELARGONIUM GRANDIFLORUM.

Among the many classes of pot-plants grown in greenhouses, the Pelargonium tribe does certainly occupy one of the first places, on account of its handsome flowers, as well as the great variety of color. The greatest fault with them, so far, has been that the period of their flowering is so short. This imperfection seems now to have been overcome by Mr. Vanden Heede, of Lille, who, by artificial crossing of *P. Gloire de Paris* and *Gloire de Crimée*, has obtained a variety which is constantly in bloom.

The flowers are large and of good form, the lower petals light vivid pink, the upper ones darker and spotted deep purple, center white. The foliage is well formed and light green. It is evidently a grand acquisition, competing with the Zonals, with which it is desirable that it should be crossed in the manner Mr. Wills has crossed them with *P. peltatum*. To the intelligent experimenter there is a wide field open in this direction.

Jean Sisley, *Lyons, France.*

STARTING SEEDS.

"When possible to purchase plants from a nurseryman, the amateur will avoid much care and trouble in trying to sprout seeds by getting his garden stock ready started." I don't know where this advice was printed, but it caught my eye in the heap of garden literature on my table as gratefully as if it had suggested buying a music box instead of learning the art of music. Of course, all such hints are proper enough, taken with reserve. If one has little time, and wishes flowers with least effort, or if perennials are wanted to bloom the present year, the nursery florist is one's best friend. But those who garden for the love of it find no plants so priceless as those they have raised from seed sown by their own fingers, watched from the first seed leaf, rejoiced in day by day, guarded, cherished without check into lovely and perfect luxuriance. It is not enough that a plant merely lives and blooms—one can't be satisfied unless it is brought to the highest beauty of which it is capable. And, to secure this, one wants to control every hour and condition of its life.

As for seed, one is much at the mercy of dealers, and it is a thankless undertaking to sow seeds except those obtained from the most reliable sources.

But taking the best seed one can get, the germination needs to be hastened, as far as skill can effect it, for every week and day is a gain in short northern seasons. Soaking softens the shell which the germ has to burst by force, and soaking in warm water over night on the back of a stove, where it keeps warm, puts common seed in good condition for sowing.

The soil for seed-boxes or beds is pretty sure to be too coarse or too fine; either in lumps which shade and chill the seed, or cramp it when sprouted, or the too careful sower has sifted it till it is like flour, and breaks into a crust which no seed can break. Sifted it should be, but like coarse meal, and more than half sand, which is warm, light, and loose, for the tender plumules to root in.

My seed-boxes, made to answer the purpose of in-door hot-beds, are four inches deep, with cracks or holes bored for drainage in the bottom, over which a scant layer of moss is spread, and an inch or more of soil. This was sifted, mixed with sand, and stored in the shed last fall, where it was thoroughly frozen, the frost glistening through it when brought in lumps into the house. To thaw it, the boxes were set in the oven till the earth came out smoking warm, and drying on the top like furrows in a March wind. In this propitious state, a tablespoonful of bone-dust was forked in with a little hand-fork, the top smoothed and the seed sown, picking the finest on the point of a penknife and sinking it just where it was wanted.

It is not easy sowing wet seed otherwise, and the covering is a nice matter. To sift soil over and then water it will sink and wash part of the seed out of good growing depth, and you cannot sift damp soil. It is easier to press the seed down ever so slightly, and a light hand is needed for this and other operations of gardening, or a jar of the box will make the seed sink enough of themselves.

Pressing the surface with a board or trowel is not necessary; that is only called for in outdoor gardening, to protect seed from the sun or from high winds, which would carry it away. In boxes we can give the seed its mellow soil, its steady heat and moisture, the darkness and shelter it loves. The secret of quick starting is to give seed heat, moisture, and shelter without interruption. In a greenhouse or hot-bed this is easy; but I am writing of the in-door work,—raising plants by hand, one may call it,—which the beginner feels an uncertain essay. The risk and care may be diminished more than half by planting in moist soil, already warm, and keeping it so. But how to keep them so, when boxes over the stove or in a room have a trick of drying up hopelessly when one least expects?

There came a little invention which has made my spring sowing so successful that I am anxious to share the knowledge with others. Thick wrapping-paper was cut two inches wider than the top of each box, on all sides, and folded to fit as closely as the cover of a book, the corners held by a tack driven in each, just so it would hold. This was as good as a hot-bed cover for keeping the seed protected and moist. The boxes were piled on shelves back of the kitchen stove, some set on soap-stones on the top of parlor and cooking stoves to secure under heat, and left to their own devices for three days. Then the tacks were drawn and cover lifted; but the soil being perfectly moist, the paper was fastened down again till the end of the week, when most of the boxes needed a sprinkling.

They were left again to warmth and darkness for the next week, when, on lifting the paper, I found the seedlings had knocked their pretty heads against it. Of course, these ambitious nurslings were to be lifted, to give the rest of the seed which had not sprouted a chance.

For these delicate operations my tools are rather laughable; but I find an old table-knife better than a trowel, while a steel three-tined table-fork for stirring the soil, a cooking-spoon for a shovel, and one tine of a shell hair-pin four inches long, is the best dibble for lifting and setting seedlings in their third leaf.

The thumb pots were filled with the same sandy soil as the seed-boxes, with a thought more meld in them, and a pinch of lime over the moss below, which kept the drainage open. This lime, under the soil, keeps all my house-plants free from worms. In a hundred pots and boxes, last winter, only three had worms, and those had no lime. But I do not like pots for young seedlings, —they dry too easily,— except for Sweet Peas and choice Nasturtiums. My younglings go in the four-inch box, and are sunk in the soil up to their leaves. Very little loss follows from shriveled roots, because water did not penetrate the soil more than half an inch. The remedy,—or prevention rather,—was setting the box in a pan of water till the soil absorbed moisture from below.

After these daily, or half-daily, sprinklings, another invention has been of much use: Covering the plant-boxes with light manilla paper, oiled with raw linseed oil, tacked high enough to give room for the plants to grow. The oiled paper gives just the right degree of sunlight and heat for the young sprouts, and I never saw seedlings of a finer green than those grown under this paper. It was my own idea to use it; but the practice, I find, was recommended by gardeners a hundred years ago. This cover keeps the little hot-bed very moist, the water standing on the under side of the paper, like dew; but the same care must be given to air the boxes, as in a greenhouse. The oiled paper suits many uses for plants, in screens and shades.

These cares I delight in—the fine, fastidious exactness of the florist's first work; and the time is near for starting delicate greenhouse seeds, which require just such careful handling. The most ardent florist beginner will kill two or three batches of seed learning how to start them, and some seeds are so delicate that the professional florist, even, finds it not easy to start them into growth; but what is learned by experience is remembered.

EAST DEDHAM.

THE FLAMINGO PLANT.

Anthurium Scherzerianum.

All the species of Anthurium are of striking and brilliant beauty, and as exhibition plants, when well grown, we do not know of anything that attracts more attention. Our illustration shows the general character of the genus, but no one who has not seen vigorous, well-developed specimens can form an idea of their gorgeous appearance.

Anthurium Scherzerianum is probably the best known and easiest cultivated species, and having received lately several inquiries about its treatment, we give the following description and directions, from *Gardening Illustrated*:

Few plants have improved under culture so much as this. It is a native of Guatemala and Costa Rica, growing in moist positions, and bearing very small spathes, or flowers, rarely over one inch long, among the dwarf herbage by which it is surrounded. Indeed, so inconspicuous is the plant in its native habitat, that collectors have passed it time after time, not considering it showy enough to be worth introduction.

ANTHURIUM WAROCYGNEANUM.

Liberal culture has, however, worked wonders, and instead of the little "brick-red" spathes, only an inch in length, accompanied by foliage small in proportion, we now have fine forms bearing spathes from five to eight inches in length, and three to five inches in broadth, the color being of the brightest shining scarlet or vermilion imaginable. Instead of sinking in public estimation, after the manner of many other plants, this has gradually won its way into popular favor, and is now to be found by the dozen in many private gardens, while some of the leading nursery-men have it in stock by the thousand to meet the over-increasing demand from amateur cultivators.

PROPAGATION.

One thing likely to make this plant popular amongst small growers and amateurs is the ease with which it is multiplied, either by seed or division. Old and well-established specimens frequently bear abundance of seed without any assistance from the cultivator, and seed so produced rarely fails to germinate freely, sown in shallow, well-drained pans of light, sandy compost. If placed in a close case on a gentle hot-bed, germination will take place much sooner, and the pan should not be disturbed, for the young plants will continue to make their appearance for a year or two after the seeds are sown. The young seedlings may be removed as they develop themselves, and if pricked off into other pans, or potted singly in small pots, they soon increase in size and vigor.

After fertilization the seeds are at least a year in arriving at maturity, and when ripe, the scarlet berries start from the flower-spike and hang down at the sides. When they are ripe it is best to sow them at once, treating them as above recommended.

The plant can also be propagated by the division of large specimens, or by removing the offsets on small plants, which are somewhat freely produced around the bases of the old stems.

CULTURE.

This plant can be grown by every one who has a warm greenhouse or vinery. It likes a warm temperature and plenty of moisture at the root all the year round. The compost best suited to this plant is fibrous peat in lumps as large as pigeon's-eggs, living Sphagnum moss, mixed with broken crocks, leaf-mold, and sufficient coarse, well-washed sand or grit to keep the whole open and porous. The pot must be well drained, and if possible induce the moss to grow freely on the surface of the compost.

In potting take care to elevate the plant well above the rim of the pot, and the addition of a little more compost and moss is desirable, as the plant roots out above the pot. It grows very freely when its requirements are duly attended to, and in the case of vigorous specimens a little stimulant in the way of weak liquid manure is beneficial.

The plant is not subject to many insect pests, but like all other hard-leaved plants, it should be repeatedly sponged with clean water to remove dust and other impurities, while frequent and regular syringings with tepid water promote its healthy growth and vigor.

Lawn and Landscape.

HALF A DOZEN GOOD SHRUBS.

WEIGELIA.

With each returning June a beautiful little *Weigelia rosea* peers out from under a large Norway Spruce in my lawn. It is considerably dwarfed, and from its position one would suppose that it could receive neither rain nor dew sufficient to maintain its position a single year; but it has, nevertheless, for ten or more years expanded its myriads of blossoms, ranging from pale flesh to dark rose, to gladden our sight. The Rose Weigelia is undoubtedly the prettiest and most desirable of all flowering shrubs. It is perfectly hardy, and exceeds in profusion and wealth of bloom all others, while its varying color and good foliage give it the appearance of a large bouquet.

GOLDEN SPIRÆA.

Next to the Weigelia my favorite is the Golden Spiræa. Its leaves come out early in May, with a bright golden color, which is maintained with a gradual change to lemon, and then light green about the middle of June, when it becomes covered with small, white clusters of blossoms, which are followed by red seed-capsules that entirely cover the bush, and give it a peculiar appearance of its own through the rest of the season. This shrub is a sport from the native *Spiræa opulifolia*, is hardy, and of cleanly habit.

SYRINGA.

The third shrub of my preference is the sweet-scented Philadelphus *Ph. coronaria*, popularly called Syringa, or Mock Orange. There are two distinct varieties, blooming ten days apart, of one of which the young wood is of a red color. It sows its seeds freely, and seedlings varying slightly from the parent are quite common.

Its wealth of white makes the Syringa desirable to plant as a foreground to evergreens, or dark-colored buildings.

RED DOGWOOD.

A fourth shrub that flourishes in any but the very driest soils is the *Cornus sanguinea*. Its stems are a bright scarlet all winter and spring, while its summer dress is pleasing and its habit good. It blooms in June, bearing its blossoms, small corymbs of elder-like flowers, followed by white fruit. The foliage in August is favorite food for a snow-white caterpillar, which is easily destroyed with white hellebore.

PURPLE BARBERRY.

A very unique shrub is the Purple Barberry. It is in habit of growth and general characteristics similar to the common Barberry bush of New England, but its foliage for the first two months after bursting into growth is a deep chocolate purple. It is so singular and attractive in appearance that it has been for several years a special favorite of mine, but this morning I noticed for the first time a disgusting and apparently hopeless disease upon it. Under a microscope of low power the leaves appear dotted here and there with small clusters of a fungus-looking growth, displaying small cups of a bright orange hue. In more advanced stages they cover a space a third of an inch in diameter, and minute green aphis may be seen around them, and also larvæ, the largest of which are about one thirty-second of an inch in length. The full-grown larvæ are orange colored, while the smaller ones are quite slender and pale green in color. Where the insects are most plentiful the leaves are covered with a mealy powder-like pollen, and a net-work of spider like webs.

TARTARIAN HONEYSUCKLE.

This is the earliest of all, save the Lilac, to put forth its light-green leaves; its bloom is abundant, and all summer its bright semi-transparent fruit delights the eye.

For a small collection I do not know of anything more desirable than these six shrubs, singly or in groups; and of their proper arrangement and the principles thereof I will write at another time.

L. B. PIERCE.

WALKS AND ROADS.

The guiding principle in locating the position of roads and walks is utility. Nature forms no roads or paths; they are the work of men and animals, and would undoubtedly always proceed in straight lines from point to point if obstructions of various kinds did not interfere and cause deviations. Necessity will, therefore, suggest where and how they should be introduced.

So far as regards roads and walks to and from buildings or prominent points of interest, the object of their introduction is sufficiently apparent; but in arranging or laying out pleasure-grounds and lawns it is too common a practice to introduce walks merely to fill up the ground, under the erroneous idea that it forms a pleasing variety of ornament, or that a walk is in itself a thing of beauty, like a tree, which it is not. These are all very questionable reasons for doing a very absurd thing,—that is, making a walk where it is not needed. A road or walk should always appear to aim for some definite object, or lead as directly as practicable to points of sufficient importance to show their utility.

Unnecessary roads and walks should be carefully avoided; they are expensive, usually, in their construction, if properly made, and require to be kept clean and neat. Nothing looks more woe-begone and poverty-stricken than a weedy, neglected road to a house, or walks through pleasure-grounds or gardens. They detract much from the beauty of the surroundings, no matter how elaborate or intrinsically worthy they may be. An oversupply of roads and walks is always a serious infliction, and their useless introduction is a sure evidence of the work of a novice in landscape gardening.

The endeavor to introduce the beauty of curved lines sometimes prompts to a deviation from the more available direct course, and where it can be done without too great a sacrifice of utility, it is not objectionable, but, on the contrary, adds to the good effect. But walks or roads should never be turned from their obvious direct course without an apparently sufficient reason. A change of level of ground-surface, a tree, or a group of plants, or other similar obstruction, will induce, and seemingly demand, a change of line.

There are many locations where the straight line should be preferred as a matter of taste in design. As a connecting link, or as defining a point between the strictly architectural lines of a building and the irregular surfaces and outlines of natural objects contiguous to it, a perfectly straight walk is in the best taste, and adds greatly to architectural effect; while, on the other hand, a serpentine or frequently curving walk, following, it may be, all the projecting and receding lines of the ground plan of the building, detracts from both solidity and harmony of effect. So also a walk alongside of a straight boundary fence, especially in limited areas where both the fence and walk are visible at the same time, should not curve until it at least deflects into a course directed from the boundary line; and yet we may occasionally notice a zigzag walk under these circumstances, and so decidedly crooked that one steps first on zig and then on zag in the attempt to walk over the pathway.

Most persons are aware of the great beauty of straight walks, and avenues of trees when properly placed, and for public parks of the lesser order, such as in small squares in cities, they are both effective and convenient, where curving walks would be the reverse. In this case beauty depends upon harmony rather than upon contrast, and, more than either, upon utility. When roads or walks are carried over irregular surfaces, the natural turns and windings necessary to follow an easy grade and keep as closely to the original surface of the ground as possible will usually develop pleasing curves. A little studied attention to this question as to the course of a walk or road will increase the beauty of curving lines by adding to them the factor of utility; deep and expensive cuttings, as well as troublesome embankments, may also be avoided, and easy grades and economical construction be secured.

When it is necessary to branch a secondary road from the main road, it should leave the latter at nearly a right angle, and at the same time it should be somewhat narrower than the principal road, so as to avoid confusion or mistake. Otherwise, the roads leading to the ice-house, the stable, or other out-buildings may be mistaken for the road to the dwelling. All these roads should be made to appear subordinate.

In laying out curving or winding walks or roads it is not always best to follow geometrical rules, or to set the curves out to any regular radius. This plan may occasionally prove perfectly satisfactory on a strictly level surface, but it will have quite an opposite effect where the ground is undulating. The curves, to be pleasing, must be what is known as "eye-sweet"—not too sudden or abrupt—and properly blended at their points of junction.—*Wm. Saunders, before the District of Columbia Horticultural Society.*

MOWING LAWNS.

To maintain a lawn in perfect condition, it must be mowed every week or ten days, but not so close as to lay bare the grass roots. Nothing is so destructive to a good lawn as too close mowing. If the mowing is done regularly at proper time, the clippings need never be removed, except perhaps after the first mowing in spring. In fact, the clippings constitute a valuable fertilizer and mulch, of which the lawn should not be deprived, and rakes do generally more harm than good on a lawn. The best implement for smoothing a lawn is a good roller.

Rural Life.

ENLARGING THE DINING-ROOMS.

In the good old times when the mistress and her daughters did all the housework, there was not the necessity for a room consecrated to ornamental china and fancy cooking that is now felt in all well regulated and high-toned families. Indeed, the clean, bright, open kitchen, with its sanded or polished floor, was a very comfortable and convenient place for the family to assemble, not only for their evening work and amusement, but for their daily bread.

When the mistress retired from the kitchen and gave up its care and management to subordinates, the change in that department is scarcely less than the modification of the style of living throughout the house. From being an inviting place it became an uncomfortable and confused workshop whose appearance and character were highly uncertain.

Generally, the modern dining-room is an apartment devoted to a special purpose. In families where the old fashion of doing her own work is kept up by the mistress it is practicable to use this room even for a sitting room; but if the business of clearing and setting the table is carried on by the ordinary kitchen servant, it must be abandoned by the rest of the family so large a part of the time that it cannot well be made to serve anything else than its own legitimate purpose.

In many houses, especially those that were built several years ago, there was a sort of compromise by making this room very small, barely large enough to contain the table and its row of chairs; consequently, houses otherwise capacious are often found with a dining-room of altogether inadequate dimensions. In houses that are blessed with hospitable intentions this should be at least as large as any other single apartment in the house.

How to get more room is a question more commonly asked in regard to the dining-room than of any other in the house, unless the front hall be excepted. Like the familiar advice concerning the resumption of specie payments, it may be said that the best way to enlarge a dining-room is to enlarge it. If this cannot be done without encroaching upon other rooms of the house which are already small enough, then space must be taken from outside. As tables are arranged in a majority of cases, the first demand is for more length. Many rooms which would be large enough if it were not for a projecting chimney-breast or sideboard, are cramped by these articles so as to be practically of very small size.

Hence, if a recess can be made to contain the sideboard, with space enough around it for the servant who waits upon the table to stand without encroaching upon the room itself, such an addition will add to the capacity of the room just as much as if the whole side were extended, and the saving of cost as well as the improved appearance will be very great. Of course this suggestion is only intended for houses and buildings which feel their limitation in this respect, and there is great satisfaction in treating a defect in such a way as to convert it into an actual advantage.—*The Builder.*

COMPANY IN THE COUNTRY.

A great part of the world lies under the delusion that the only place where people ought to have or desire to have company is in the country. Country teas have come to be proverbial for their abundance. And yet, in many respects, it is much harder to entertain in the country than in the city. Country residents must be thrown on their own resources, and are obliged to rely upon them; and though the results may be most satisfactory, yet the attainment thereto is by no means so easy.

Entertaining in the country is very pleasant, and helps to brighten up life. Why should it be made a burden? There surely is no reason, if the entertainers will only be independent, and instead of trying to imitate the ways of others, would inaugurate ways of their own.

For instance, if you want to give an evening party, why need the supper have the aroma of a restaurant about it, tricked off with Frenchified names not one person in twenty can comprehend? Why send five miles for oysters and ice cream, when Plenty is smiling at your own door, holding out her hands filled with riches a city caterer little dreams of?

Very much depends upon the garniture of the table; and in the country with our wealth of autumn leaves glowing with every hue divine, and our Holly in winter, our bright and varied assortment of berries, from the dusky Sumac to the Bitter-sweet's pale-red and yellow, all are ornamental and effective in dressing a room or table tastefully; to say nothing of summer with its trailing festoons of flowers, its glossy leaves and cool Ferns. Make but use of what is with you and around you, and there will be no room for other adornment.

In the country, fruit parties are always delightful and always acceptable. We can call to mind a really splendid entertainment, where all the long suites of rooms were decorated with fruit in every imaginable way except an ugly one. Peaches and early Apples peeped out from behind clusters of graceful leaves; festoons and piles of Grapes and flowers vied with any ever offered at Ceres' or Flora's shrine in fragrance and beauty. When you have nature, use it; it is before you in the country; when you have art, employ it; it is all you have in the city; but do not banish nature, which you do not understand and know perfectly, to bring in art, which has to be studied or else is ridiculous.

Unexpected visitors are easily compared with those who set the time and do not come. The carriage meets the train at four precisely. The man has been taken out of the field to harness up and drive, only to find the labor in vain, and another afternoon has to be wasted on a similar errand. How a little consideration would obviate all this trouble! If any one makes an engagement to visit the country, and expects to be met at cars or steam-boat, it ought to be a settled rule that nothing but illness should prevent that engagement from being kept.

The "spare room" has been set in order, other friends have been put off, the bountiful tea or the late dinner has been set to suit your hour. Everybody has dress and face all fixed for a welcome. How disappointing to see the carriage return empty, with no happy face beaming out a pleasant return for the vociferous welcome of the children and dogs! Perhaps the next day will not be so propitious; the man of the house may be cross, the horses lame, the harness out of order, or else some one else has "stepped in before you." A friend is twice welcome who comes promptly. But how few think so! Many fancy they are conferring a wonderful favor by bestowing their society at all where else they fancy it must be so lonesome, and who take it for granted that horses and men must be always ready at the disposal of every visitor who designs to relieve such tediousness.

Another hint to those who visit in the country. Do not fancy that you will find everything so very rustic that you can leave all your good gowns at home, and embrace the occasion for wearing out all the old-fashioned ones that chance to be left of last year's wear, too often in a sadly dilapidated condition.

It is very well to have one stout "mountain" or "sea-side" dress, but have also something tasteful and new in case you are invited out, that you may not mortify your hosts; for be sure country people know just as much about good apparel as others; and even if it were not so it is by no means flattering to be reminded of their deficiencies by the display of a shabby wardrobe. In fact, few can appreciate the latest fashions or the newest styles, or the pretty, dainty little touches that finish off dress more than those to whom they come with the freshness of novelty; and although we ought not always to be judged by our dress, yet that is almost the only way in which strangers can judge; and a neat, genteel appearance goes far toward winning favor in the eyes of our friends' acquaintances. A young lady of style at home would hardly wish, when she visits abroad, to have the remark made: "Who was that dowdy girl in Jones' pew?" or, "A pretty face, only how forlorn she looked when I met her at Mrs. E's party."

Now as to having friends as guests. It is often made a task where it might be a pleasure, because, instead of letting them slide into your ways, you try to fashion your domestic arrangements to theirs.

Instead of letting all the wheels of life stand still in consequence of company, let the company, no matter who they are, see that you are by no means to be defrauded of your household engagements by their presence, and by and by they will enjoy a little ramble alone, or a book on a sunny piazza, until you are at leisure to join them, or else will gladly go the rounds with you, cutting the flowers, training the plants, inspecting the poultry yard, the kitchen garden, or even dispensing the stores from the store-room.

Time then will pass easily and agreeably. Although there are many inconveniences attending company in the country, still they need not be increased by useless care and foolish ambitions. Few people but feel the tacit compliment of being made for the time being one of the family, and happy in being sharers in all that is going on. The very dogs instinctively know such guests, and enjoy their society full as much as do their masters, and indeed in the country your dogs and birds and cats do their full share toward entertaining your friends, and making them feel at home. As for the children, they dote on them.—*Harper's Bazar.*

Foreign Gardening.

HORTICULTURE IN RUSSIA.

The International Exhibition of the Imperial Society of Horticulture, which was held in St. Petersburg from May 17th to 28th, shows what high degree of development horticulture has already attained in Russia.

The interior of the building in which it was held, writes a special correspondent of the *Gardener's Chronicle*, is oblong, about three hundred paces long, and about sixty-six paces in breadth, and upon this unpromising dead level and rigidly restricted space has been formed a scene which, for effectiveness and splendor, surpasses all expectation. From the Botanic Garden and from the Imperial Gardens at Gatschina have been brought a number of fine specimens, including many magnificent Palms and Cycads, which form in themselves an exhibition. The building in proportion is not lofty, and by skillful disposition of the plants a happy appearance of breadth has been secured, while it is at the same time completely furnished. The arrangement has been planned and carried out by Dr. Regel, the general director, and he has succeeded well in his evident aim to produce a natural effect, and to avoid all stageness. We can but say that the result entirely repays the pains and trouble that have been taken.

At the end of the building, the principal entrance opens upon an elevated platform, a kind of transverse promenade, prettily screened from the grand display by an ornamental colonnade, covered with Ivy, and from this position we get an idea of the general plan. The walls are entirely screened from view by banks of fine-foliaged and flowering plants; between the windows, Evergreens and other tall plants reach to the ceiling, and a walk gracefully curved in conformity with the shape of the central groups gives free circulation around the building, while between the groups there is free communication from side to side. The fine specimens and principal groups are shown to good advantage by undulations of the floor in imitation of a naturally favored garden.

Descending from the entrance platform, we reach the first large group on the lowest level, the next is on higher ground and includes a pond of irregular outline in rugged rock, with a fountain. Further on, the principal walk on the left is carried by a bridge over a rocky ravine which leads to the refreshment department. This bridge is formed of birch timber with its natural bark, and the effect is good. Rocks are cleverly imitated on a basis of wood by means of Russian mats; they are laid in the form desired, and then covered with plaster, which is colored in imitation of nature.

Passing the bridge, we come into view of an English garden at the further end, which slopes to a rocky background at considerable elevation. Through the center of it, and under a bridge, we pass to a department of implements, pottery, and artificial flowers, with many other miscellaneous exhibits. The English garden is tastefully laid out, though its use is purposely to be exhibited. A rivulet, bordered with Arums and crossed by a bridge, is introduced with very good effect.

From the bridge which crosses the ravine leading to the implement and miscellaneous department, we have a fine view of the entire scene, and it has a charmingly tropical aspect, enlivened by the passing and repassing of groups of visitors. The exhibits repose, as it were, in groves of fine Palms and Cycads, formed for their reception by the liberality of the great establishments already mentioned. Everywhere beneath the plants the ground is surfaced with moss, and tubs necessarily exposed are decorated with sheets of birch bark. The great groups are outlined with strips of thin wood, painted green, and within are the subordinate groups of the collections exhibited.

Judging the exhibits practically occupied the whole of the 16th. The members of the jury, to the number of nearly two hundred, assembled under the presidency of General Greig, and the business of the day was commenced by a religious service, followed by a benediction on the entire exhibition. The jurymen were divided into sixteen sections, each of which elected a president and secretary. On Saturday, the 17th, in the afternoon, the exhibition was opened in full ceremonial by the Emperor and Empress, who were attended by a throng of ambassadors, ministers, generals, and court dignitaries, all in full uniform, and bearing their decorations. There were present the Grand Duke Vladimir, the Grand Duke Nicolas, a patron of the Society, and a number of distinguished ladies.

ORANGE GROWING IN THE WEST INDIES.

It is interesting and astonishing to me, writes "Olive," in *Green's Fruit Grower*, to read how you prepare and manure your land for planting — here in Jamaica we do nothing of the kind. We simply clear away the grass and plants, and the earth quite understands that it is to bring forth abundantly. We don't cultivate our fruits; they grow wild. By growing wild I mean they grow of themselves, anywhere — in grass pieces, it ruminates in old thrown-up negro settlements, on the hills, in savanas, by river sides, and all about.

Our Orange-trees are especially hardy and long-lived; their motto is, "Never say die." All we can do is to keep our pet trees free from wild Pine, Mistletoe, and other parasites, and Nature's beneficent hand does the rest. We don't graft as you do either, which seems a pity, as it would certainly improve our fruit and make it more valuable, particularly as we have so many different kinds of each, especially of the Orange tribe, many of which you have never seen, as they want bear shipment.

In picking, each Orange is cut from the tree with a small bit of stem adhering. To wrench the fruit from the stem is bad policy, as the air penetrating the unprotected part entails speedy rot to the individual fruit, and consequently damage to the whole barrel. This work is patronized entirely by women and children. Holding her Orange in the left hand, the wrapper envelopes it in a sheet of paper, and with deft twists of the right fingers the business is complete and the fruit is handed up to the person who places it in its proper layer. This simple process is repeated *ad infinitum* till the Oranges are exhausted. A negro girl can with ease wrap from three to four barrels per day.

I like to read about your nice, cozy homes, with all the land under your own supervision. Life out here is not cozy at all. People buy or lease great big properties of hundreds and thousands of acres, which require the supervision of the master, the Busha, and various headmen and penners. Of course, we raise a good many cattle and horses, and so require plenty of grazing room; but all the same, tropical life is *not* so cozy as Northern. It is a *lazy* life too; you *live*, we *vegetate*; you rush, while we crawl. As I sit writing, there is not a sound to be heard but the nightingale singing outside and the rustle of the breeze among the canes. Nothing is to be seen but green woods and blue hills; very pretty but monotonous to a native. Jamaica is certainly a splendid place for rest, but—ah well, I mustn't grumble.

JAPANESE FRUITS.

According to *Dr. Vidal*, in the *Bulletin de la Société d'Acclimatation de Paris*, our fruits are represented in Japan by nearly all the species commonly cultivated in Europe, except the Almond.

The Peach-tree is commonly grown, producing handsome fruit, which is often seen in the markets. Judging from their appearance, the Japanese Peaches should be very good, though perhaps not equal to the Chinese. Unfortunately, however, the Japanese are in the habit of eating their Peaches quite green, and as one cannot procure ripe ones, it is impossible to judge of their quality. It is the same with the Nectarine, the fruit of which is handsome, but gathered much too green.

The Plum is scarcely so common as the preceding; at least as a fruit-tree, being also planted for ornament.

The Cherry is widely diffused, though it produces only very small, inferior fruit, which is eaten neither by the natives nor foreigners. It is generally grown as an ornamental tree, and it also occurs wild.

The Pear is an object of careful culture, after a method peculiarly Japanese. The trees are planted in rows in quincunx order, forming avenues about three yards broad. They are grafted and pruned with great care. Only about four or five principal branches are left, and these are soon stopped, in order to encourage the early growth of the secondary ones, which are trained out horizontally on Bamboos arranged for the purpose, about five feet from the ground. The variety is a winter fruit of considerable size, sometimes very large. It rarely attains perfect ripeness, is rather dry and slightly acid, though occasionally one finds a very good fruit.

The Apple is far from being so common as the Pear, nor is it so carefully cultivated. The sort commonly seen has a small yellowish fruit of agreeable flavor. No regular Apple orchards were observed.

The Quince is very common, especially in the North, and the fruit, which is very fine, is eaten by the natives as we eat Apples and Pears.

The Strawberry and the Raspberry are only seen in the wild state. There are two sorts of Raspberry, one with yellow and the other with red fruit. As for the Strawberries, they are entirely devoid of flavor, and worthless for the table. For some years European varieties have been grown in quantity at the ports frequented by Europeans.

Horticultural Societies.

MASSACHUSETTS HORTICULTURAL SOCIETY.

The grand Rose and Strawberry Exhibition of this society was held on June 24th and 25th, at Horticultural Hall, Boston, and as far as the number and excellence of the exhibits in general beauty and choice of varieties, and especially the arrangement and management of the whole, are concerned, it has probably never been equaled on this continent. The beautiful granite building in the very heart of the city, within a few steps of the Common, is the property of the society, and is admirably arranged for exhibition purposes, occupying an entire square; light is obtained from all sides. The upper hall, in which the flowers were shown, was very tastefully and ingeniously mapped out so as to show each exhibit to the best advantage, and the bird's-eye view of the whole, as seen from the gallery, might without much imagination make one believe to have suddenly become transported into fairy-land. There was nothing of the stiff, monotonous appearance produced by long, narrow, parallel tables; the whole disposition of the tables and stages was so tasteful and natural as to resemble the parterres of a beautiful flower garden, more than an exhibition hall, as usually arranged.

In the center was a very broad table for the Roses competing for the silver "Challenge Vase" of the value of $200, for twenty-four varieties, three specimens each, to be held by the winner against all comers for three consecutive years, and then to be his property absolutely. The vase was won by John B. Moore & Son, and deservedly so, for a more magnificent display of Roses it has never before been our fortune to see—not one of them that was not perfect. The collection consisted of Abel Carriero, Baroness Rothschild, Boieldieu, Charles Lefebvre, Mabel Morrison, Duke of Edinburgh, François Michelon, Jean Liabaud, Glory of Cheshunt, Baron de Boustetten, La Rosiero, Etienne Levet, Marie Baumann, Camille Bernadin, Mme. Gabriel Luizet, Marquise de Castellane, Charles Darwin, Crown Prince, Comtesse de Serenye, Maurice Bernadin, Louis Van Houtte, Marguerite de St. Amande, Marchioness of Exeter, Mme. Prosper Langier.

Other tables, containing the exhibits of those competing for the society's regular prizes, were arranged nearer to the platform, while along the walls, just below the large windows, were huge banks of Roses, in bottles, so arranged that nothing but the flowers and their foliage was visible. This arrangement was especially pleasing, the tables so placed as to form alcoves or recesses, and presenting each exhibit to the best possible advantage, and at the same time giving the whole a more varied appearance than could be produced with straight rows of tables.

The special subscription prizes of silver vases for Hybrid Perpetual Roses, twenty-four of different varieties, were awarded to John L. Gardner; second, William Gray, Jr. Six of different varieties, John S. Richards. Twelve of different varieties, William H. Spooner. Eighteen of different varieties, John L. Gardner. Six of any two varieties, three of each, Francis B. Hayes. Eighteen of six varieties, three of each, William H. Spooner. Special prize offered by a member of the society for the best six blooms of any variety, to be judged by a scale of points, William A. Spooner, for Mme. Gabriel Luizet. The special prizes offered by the society for the best six blooms each of Alfred Colomb, Baroness Rothschild, Jean Liabaud, John Hopper, Marquise de Castellane, and Mme. Victor Verdier, were all taken by John B. Moore & Son; and that for Mme. Gabriel Luizot, by William H. Spooner. The prize for twelve blooms of any other variety was awarded to John B. Moore & Son for Mons. Boucenne, and the first, second, and third, for a single bloom of any variety, to the same for François Michelon, Mme. Gabriel Luizet and Alfred Colomb respectively.

Of the society's regular prizes, that for twenty-four varieties of Hybrid Perpetual Roses, three of each, was awarded to John B. Moore & Son. Twelve varieties, William H. Spooner; second, John L. Gardner; third, Francis B. Hayes. Six varieties, John L. Gardner; second and third, John S. Richards. Three varieties, Francis B. Hayes; second, John S. Richards; third, John L. Gardner. Moss Roses, six named varieties, William H. Spooner; second, John B. Moore & Son. Three varieties. John B. Moore & Son; second, William H. Spooner. General display of one hundred bottles of Hardy Roses, John B. Moore & Son; second, Norton Brothers; third, John S. Richards; fourth, Francis B. Hayes; fifth, William H. Spooner.

Next to the Roses, the orchids probably attracted most attention, and here again the variety of curious forms, rich colors, and delicious fragrance was indescribable. The principal exhibitors were F. L. Ames and David Allan, gardener to R. M. Pratt, who together filled the first stand in the upper hall. H. H. Hunnewell had a fine collection on the next table, and all were interspersed and set off with the beautiful foliage of the *Asparagus plumosus*, or of rare and delicate ferns. Mr. Hunnewell had also flowers of the *Dipladenia amabilis*, a rare hot-house plant, and a specimen of the *Nertera depressa*, or Bead plant, looking like a mossy surface thickly strewn with orange-colored beads. Mr. Hunnewell also filled a platform with a collection of greenhouse plants in flower, which received the first prize, and included *Spathyphyllum hybridum*. On this platform was also a remarkably fine *Rhynchospermum jasminoides*, which took the second prize as the best specimen flowering plant; a fine Clerodendron, and several finely bloomed Pelargoniums. On the opposite side of the hall was a platform of plants from John L. Gardner, who took the first prize for a collection of flowering plants, among them a *Rhynchospermum*, which we should think would have puzzled the committee to decide between it and Mr. Hunnewell's. Mr. Gardner took the first prize for a specimen flowering plant with *Erica Bothwelliana*, which we thought the finest heath we have ever seen, though an *Erica ventricosa superba* was more beautiful in flower, but not so large a plant.

A specimen of a double *Deutzia scabra*, a new seedling, originated by John Richardson, was shown, and promises to be an acquisition to our hardy shrubs. J. W. Manning exhibited a large collection of hardy herbaceous plants, comprising fifty species, all carefully named. The display of Sweet Williams was uncommonly fine. Edward W. Breed made a good display of Carnations, and W. C. Strong exhibited a collection of variegated tree and shrub foliage. On the lower floor were the exhibitions of fruits and vegetables.

The collection of Strawberries was remarkably fine, comprising about one hundred and fifty dishes of fruit, but appearing much larger on account of the berries being shown in single layers on plates made for the purpose. For size the Sharpless took the lead, but it had a powerful competitor in the Belmont, a new seedling of Mr. Warren Heustis, which pleased us very much. It was raised from Sharpless seed five years ago, and has its full-developed character. It is of large size, about that of a medium-sized Sharpless, of peculiar, purse-shaped, attractive form, very uniform, brighter in color than Sharpless, and of much better quality. It is a prolific bearer, and a most vigorous grower. It was without exception the most attractive looking berry on exhibition. Jersey Queen, Manchester, Cumberland Triumph, Bidwell, Hervey Davis, Wilder, Miner, were among the most inviting in appearance.

Black Hamburg Grapes, from the Hon. Francis B. Hayes, the president of the society, were of enormous size and well colored.

Among vegetables, Peas took a leading position, and we have certainly never seen finer dishes anywhere. All the premiums for Peas, regardless of variety, were awarded for American Wonder. Beets, Carrots, Cucumbers, Lettuce, Tomatoes, in fact, every kind of vegetable that can be produced out of doors or under glass at this season, were represented.

We could easily fill many pages in describing all the many floral and other attractions contained in these enchanting halls during these two days, not the least interesting of which were the intelligent and observant visitors, ladies principally, who were as familiar with the qualities and merits of the different varieties as professional florists. The exhibition, as a whole, as well as in its details, was a grand success, well worth a long journey to see; and to any one who wishes to see a real flower show, be it Roses or Rhododendrons, or anything else, we would say, go to Boston.

THE NEW ORLEANS WORLD'S FAIR.

The Hon. P. J. Berkmans, of Augusta, Ga., First Vice-President of the American Pomological Society, sailed for the Old World on the 18th ult., in the capacity of Foreign Commissioner for the Centennial Cotton Exposition, to be held in New Orleans next winter. He will visit first Egypt and other North African States, then the southern countries of Europe, and lastly the middle and northern parts of the continent. His commission comes both from the Exposition authorities, and from the President of the United States, so that he starts equipped with the most favorable facilities.

The managers of the fair are to be congratulated upon having been able to secure the services of a man so excellently fitted for the position. His familiarity with several European languages, his eminent knowledge and experience in pomology and horticultural and agricultural matters in general, combined with hearty geniality and genuine gentility, make him just *the* man for the place. We wish him all possible success in his undertakings.

Household Pets.

CARE OF BIRDS.

I pity caged birds, yet so many people have and love them that it is often a part of the care of a household to look after its "pets." First on the list is the canary, and we will for a while see what can be done to make its little life happy, and at the same time have all the music we can. The size of the cage makes a great difference in this matter, for the larger the cage, the less music. Your bird will skip about and amuse himself otherwise than with trills. Give him plenty of water to drink, and a daily bath in the full sunshine. But the hen bird must be deprived of the bath-tub while setting. Ornamental brass wire cages are bad; the verdigris is sure to poison the bird. So also are painted cages. Those of white, tinned wire are the best, furnished with two perches, the food and drinking vessels always outside of the cage, the floor movable, and always strewn with coarse sand.

There is a great difference in the disposition of canaries; some are gay and fond of company; others are of a retiring disposition, and, either from vanity or modesty, will not sing a note in the presence of another bird. The food should be summer Rape-seed, and now and then a little Oats or Canary-seed. They are fond of Cabbage-leaf, a bit of Groundsel, or a quarter of an Apple. Avoid sugar or cake, but give a lump of bay salt between the bars. Let the seed be put in fresh every day, so that he will not pick it over and have to eat the refuse if you do not refill the dish until empty. If he is dull and mopish he may have taken cold or have been frightened. Give him a little magnesia or a drop of castor oil, put down his throat through a quill. After moulting, a canary often loses his voice and requires all the care you would give to a fledgling.

Perhaps your pet is a robin, for he is a cheery house-bird if once domesticated. He should have a large cage, twenty inches long by twelve wide, and the same height. He wants lean meat, fresh, green food, worms, grains of wheat, and ripe berries. The robin is fond of butter, but must not be too much indulged. I quote from an old work on bird diseases and cures, the following:

"Dysentery: Diet of eggs and meal-worms. Cramp: Diet, meal-worms. Giddiness: Administer a green caterpillar. Dullness and melancholy: Chop up a pot marigold in the food. Moulting: Give poppy seed and saffron in the water. Let the robin have plenty of water to drink and bathe in."

Whatever your pet may be, it is well to consider that it will not endure neglect with impunity; that fresh air, pure water, and clean quarters are a necessity, and that all animals know, and feel, and understand a great deal more than we give them credit for, and appreciate kindness almost as much as a human being. They are sensitive to a draught, and suffer in too heated an atmosphere more than from cold. But for all the care required they will repay us with their pretty ways and cheering songs.—*Annie L. Jack, in "Good Cheer."*

Miscellaneous.

A SERMON IN RHYME.

If you have a friend worth loving,
  Love him. Yes, and let him know
That you love him ere life's evening
  Tinge his brow with sunset glow.
Why should good words ne'er be said
Of a friend—till he is dead?

If you hear a song that thrills you,
  Sung by any child of song,
Praise it, do not let the singer
  Wait deserved praises long.
Why should one who thrills your heart
Lack the joy you may impart?

If you hear a prayer that moves you,
  By its humble, pleading tone,
Join it. Do not let the seeker
  Bow before his God alone.
Why should not your brother share
The strength of "two or three" in prayer?

If you see the hot tears falling
  From a brother's eyes,
Share them. And, by sharing,
  Own your kinship with the skies,
Why should any one be glad
When a brother's heart is sad?

If a silvery laugh is rippling
  Through the sunshine on his face,
Share it. 'Tis the wise man's saying—
  For both grief and joy a place.
There's health and goodness in the mirth
In which an honest laugh has birth.

If your work is made more easy
  By a briefly helping hand,
Say so. Speak out brave and truly,
  Ere the darkness veil the land.
Should a brother workman dear
Falter for a word of cheer?

Scatter thus your seeds of kindness,
  All enriching as you go—
Leave them. Trust the Harvest Giver,
  He will make each seed to grow;
So, until its happy end,
Your life shall never lack a friend.

BOB. BURDETTE ON FARMING.

This month is a good time to pay the interest on your mortgage and renew the notes you gave a year ago. It is also a pretty good time to take up the notes you unwittingly gave to the cloth peddler last Christmas under the impression that you were only signing a contract.

Oats thrive best in an elevator. A farmer who has thirty thousand bushels of Oats in an elevator need not worry about the weather. Always raise Oats in a good elevator and keep out of a deal with the Chicago man.

Look after the Bean poles you had left over from last year. You will look a long time before you find any. They have gone, partially into the insatiate maw of the all-devouring fire-place, and neighbors have stolen the rest.

Raise chickens. If you have a nice little garden, by all means raise chickens. Your neighbor's hens are the best ones to raise. You will find them, from 5.30 A. M. until 6.20 P. M., on your Lettuce, Onion, Radish, and flower beds. You can raise them higher with a shot-gun than anything else. N. B. Always eat the hen you raise. P. S. Cook the hen before eating. P. SS. Before eating the hen, that is.

Crush egg-shells and feed them to your own chickens, if you are foolish enough to keep any. If the whites and yolks are removed from the shells first, they will crush more easily.

If a good horse shows symptoms of going blind, and is developing a few first-class spavins, it is time to sell him. Sell him out of the county, if possible. Beware of the deacon who has a little blaze-faced "pacin' mare" he wants to trade for "just such a hoss."

Eternal vigilance is the price of the Potato crop. About ten hours a day, devoted to crushing Potato bugs with hard sticks, will probably save the upper part of the patch for you. By the time you dig the Potatoes, you will be so disgusted with everything pertaining to Potato culture that you couldn't look a Potato in the eye without a feeling of nausea, and as for eating one—but this enables you to sell the whole bushel without a pang.

Young hens lay more eggs than old ones. This is because the giddy young things have not yet learned their value. In a few years they know just how to stand around on a strike when eggs are $1.75 a dozen, and then rush out and work double time when eggs are so common the tramps wont eat them.

MUMMY GARLANDS.

Dr. G. Schweinfurth gives in *Nature* an account of some new botanical discoveries made by him in connection with the mummies of the twenty-first Egyptian dynasty, found at Deri-el-Bahan. In the floral wreath on the mummy of the princess Ugi-Khouni were found perfect flowers of the Corn-poppy (*Papaver Rhœas, var. genuina*) which appear to have been gathered in an unopened condition, to prevent the petals from falling, and are in so good condition that so perfect and well-preserved specimens of this fragile flower are rarely to be met with in herbaria. It is worthy to note too that the character of this variety of the Poppy, as well as of the other plants employed, although gathered more than three thousand years ago, is identical with the same plants known at the present day.

CEMENT FOR MOUNTING PLANTS.

Take of bisulphide of carbon any quantity desired, and dissolve therein a sufficient quantity of crude India-rubber to make a cement of the proper consistency. This, says Mr. J. H. Pyster, in the *Torrey Botanical Club Bulletin*, is the best compound that can be made for the purpose of mounting plants, as well as for use where a strong cement is desired.

THE WORLD'S SUGAR PRODUCTION.

The total world's production of Sugar from various sources is, according to the *American Grocer*, estimated by reliable authority at not less than 5,000,000 tons. Of this total supply, the United States and Great Britain consume over 2,000,000 tons. The importance of this crop, commercially, may be realized if we estimate it at the low price of $65 per ton, or $325,000,000 for the whole crop. This estimate is exclusive of the Sugar consumed in India, which, according to many, produces fully one-half of the Sugar produced in the world. However, 2,260,000 tons, nearly one-half of the exportable crop, is produced from Beets in Europe.

DINING À LA MEXICANA.

TABLE MANNERS, FOOD, AND CIGARETTE SMOKING.

I invite you to dine with me to-day, dear friends, *à la Mexicana*. As I am myself a guest, we must touch the subject tenderly, and while the truth may be told at all times, we would not abuse the generous hospitality shown us on every hand by indulging in invidious comparisons. In a spirit of mutual good-feeling then, remembering that the habits of all lands vary, let us repair to the dining-room. The words "*vámos á comer*" (let us go to dinner) are welcome ones, for in Mexico we do not breakfast American fashion, but take only a small cup of chocolate and a tiny loaf of Mexican bread, without butter or other accompaniment, immediately on arising. Therefore, by 1 P. M., our healthy appetites are "sharp set" enough to do justice to any dishes, however unguessable their ingredients may be.

The comador, unlike other rooms in the house, is seldom paved or cemented (wood floors there are none in Mexico), but has simply mother earth for a cheap and convenient carpet. Much sweeping and shoving about of chairs has worn this dirt floor into hollows and gulleys. It being a few inches below the level of the court, when brief rains fall in torrents, as is common in this latitude, a small flood pours in and makes little lakes in the hollows aforesaid, which the servants bail out with plates.

In rather incongruous contrast to the earthy floor is the handsome mahogany sideboard, with much glass-ware shining upon it, some distracting pieces of old blue china, and quaint articles and Guadalahara pottery in the way of water-jars, which we long to possess. Wash-stands, with bowl and towel accompaniments, adorn the corners, the convenience of which is apparent, there being no other finger-bowls. The most distinguished guest is given the post of honor at the head of the table, in the chair of state, which is a few inches higher than the rest; other guests are ranged at his right and left, and host and hostess seat themselves wherever it happens. When we enter there is nothing upon the festive board but a heap of knives, forks, and spoons, a pile of plates, and a cluster of goblets, all at the foot of the table where the head waiter stands. Among the better classes the dinner of every day is always a most ceremonious affair, each dish being served in a separate course, necessitating a great number of plates to each person. There is little variation in the bill of fare, one dinner being an almost exact counterpart of all others during the year.

As the servants emerge from among the flowers of the sunny court, bearing our ambrosia, we think of fairy tales and the Arabian Nights—only these creados do not much resemble orthodox fairies, nor is the food they bring exactly the ambrosia of our imagination. If the waiter be a woman, her head and shoulders are always closely wrapped in her rebosa; but if a man, he wears only shirt and breeches and his wide old sombrero. First, broth is served in small china tea-cups, each cup covered with a hot tortilla (griddle-cakes of crushed corn and water, pronounced tor-tee-yah), the cup set upon a plate which holds also a large brass spoon. Mexicans have an inordinate fondness for fat of all kinds, a passion for chili, and consider onions as much a necessity of life as we do salt; hence this broth, and every other dish for that matter, is always very greasy, very garlicky, and red-hot with chili pepper. If there happens to be any ripe fruit in the house, notably Grapes, it is put into the broth and eaten with it. The other day, my delighted eyes beheld some luscious-looking Peaches being carried into the comador, and I hastened to dinner in blissful anticipation of once more being permitted to gaze upon something like home food. But what do you suppose was done with those big, yellow Peaches? They were sliced, every one, into the greasy, garlicky broth.

The second course is *sopa*—either rice, vermicelli, or macaroni, slightly boiled and then fried in fat with much garlic, and garnished with slices of green peppers. With it goat's-milk cheese is served, most persons crumbling the cheese into it, and eating the exceedingly greasy mixture with a spoon. Then comes the main dish, which never varies—the same at three hundred and sixty-five dinners in the year, throughout a Mexican's natural life—viz., boiled beef or mutton, with cabbage, corn, onions, small green apples, pears, or quinces, with various tropical seeds, roots, and bulbs, all boiled together in one pot. It is served with much chili in some shape—generally in the form of salad with alnuacates, to which "live" coals would be a mild comparison. The amount of chili which the smallest children devour as calmly as ours do candy is something astonishing, and inclines one to the belief that the Mexican "inner man" is copper-lined and double-plated. The nearest approach to roast meat comes in the fourth course,—a piece of pork or kid, stuffed with spices, herbs, chili, and chopped onions, and "boiled down" in the pot till the surface is slightly browned. What we consider a roast is no more obtainable in the Mexican market than a beef-steak.

Then follows a variety of entrées, each a separate course,—such as *chili-con-carne*, meat cut into bits and boiled with fat, tomatoes, and chili; large green peppers stuffed with chopped pork and onions, and fried in batter; pork hashed with onions, cheese, and scrambled egg; sour milk, or cheese, boiled in lumps with chili; tortillas spread with minced meat, onions, and chili, rolled up and served with tomato sauce, etc. The last dish, both for dinner and supper, is invariably the same in every Mexican household, high and low, rich and poor—that is, stewed frejoles (red beans). The laws of Medes and Persians may change, and death and taxes sometimes be evaded, but this national custom of "topping off" with frejoles—never! Some pour molasses over their beans, others prefer them mixed with sour milk, and others take them "straight," to which latter number, though it be in the minority, your correspondent belongs. To neglect to eat frejoles after each meal is not only a breach of etiquette, but is considered indubitable evidence of bad breeding and execrable taste.

We have always native wine or imported claret at dinner, and at intervals during the repast tortillas are served, smoking hot from the griddle. The latter are not brought in on plates as we serve cakes, but the servant puts them in a pile on the table-cloth, beside the host or hostess, who distributes them around to the guests with a dexterous toss, precisely like dealing cards at the innocent game of "casino." If bread is used, it is laid in the loaf on the cloth, and when one wishes a piece he cuts to suit himself. After frejoles we sometimes have fruit or "dulce" (jelly or marmalade), but generally no dessert but the beans; and the repast is concluded with cups of strong, black, bitter Mexican coffee, with sugar if desired, but no milk. This ceremonious meal requires much time, but nobody is ever in a hurry in Mexico. If the servants are tardy between courses, and keep you waiting a quarter of an hour or more while somebody leisurely rambles to market for a forgotten article, mine host is not in the least disturbed thereby, for conversation never flags, and there is nothing to do after dinner but to take a long siesta.

During eight months' residence in Mexico I have not seen a bit of butter, a potato, an egg, cooked by itself, chop or steak, tea, sauce, cake, pie or pudding, or those common vegetables which we consider indispensable. Napkins are rarely used, each person wiping his or her face and hands on that portion of the table-cloth which happens to be nearest, and afterward patronizing one of the before-mentioned corner wash-stands. Eating with the fork is not at all according to etiquette, but the spoon or knife must be used, or, more properly, a tortilla. Mexicans manage the latter with as much dexterity as a Chinese does his chop-sticks, curving it between the fingers till it forms something like a spoon, and scooping up the food with it, eating spoon and all. The very old people, and the lower classes, use tortillas altogether instead of knives, forks, or spoons, the latter "new-fangled notions" being of comparatively recent introduction. It requires considerable practice to successfully manage the tortilla scoop, as I have learned from sad experience.

After the banquet is ended, and at intervals during its progress, if one feels so inclined, the mouth is filled with water from the goblet, rinsed with more or less emphasis between the teeth, and then the water is squirted upon the floor. In this process all become expert, from the lady of the house to the smallest child. When fresher water is required, that in the glasses is carelessly tossed upon the dirt floor, where it can do no harm. While waiting for coffee, and afterward, during pauses in the "feast of reason and flow of soul," the gentlemen of the family, and not infrequently the ladies also, settle gracefully back in their chairs and smoke a cigarette or two.

In a Mexican household, at five o'clock P. M., we have always chocolate or coffee, served with bread as at breakfast, or with little cakes resembling sweetened crackers, or *pan-de-pulyne*, biscuits made with the national intoxicating beverage, distilled from the century plant. Later in the evening, at any hour from nine o'clock till midnight, comes the supper, which is almost as ceremonious a repast as the dinner, and its counterpart as to menu, minus only the broth and boiled meat. Everybody goes straight to bed from the supper-table, and what with hearty food at unseasonable hours and the eternal grease, garlic, and chili, the wonder grows that the nation did not die out long ago of dyspepsia.—*Fannie Brigham Ward, in Springfield Republican.*

Obituary.

MARSHALL P. WILDER, JR.

With deep regret we record the death of Marshall P. Wilder, Jr., son of the Hon. Marshall P. Wilder, the venerable president of the American Pomological Society. He died at his father's residence in Dorchester, Boston, on the 7th of June. For more than a year his health had been gradually declining. It was hoped a winter's residence in Colorado would restore his waning strength, but he returned in April only to pass away in the midst of a large circle of relatives and friends. He was a man of unusual abilities, and seems to have inherited a large share of the noble, manly, and Christian qualities which have made his father renowned throughout the civilized world.

His death is the more to be deplored, as, bearing his father's full name, he was expected to succeed to the parental homestead with its famous gardens and orchards, where for half a century some of the most valuable and important achievements in American horticulture were accomplished, and where the original specimens with which his father made the first experiments in hybridization are still preserved. Its disintegration would be a national loss.

But, great as young Wilder's loss is to the interests of horticulture, it is small compared with the grief and disappointment it brings to his aged parents and their immediate family. From such a home as his has been, where mutual respect and esteem animate every one of its members; where every action, every thought, betokens generosity of heart and unselfish devotion; where every breeze that rustles through the noble Beeches that shade its porticoes seems almost to be fragrant with sentiments of love, no one can easily be missed.

To his honored and beloved father, may the consciousness of his own grand and successful life, his many worthy deeds, and the love and devotion of his noble wife and his remaining children,—to all of whom we tender our sincere and heartfelt sympathy,—offer some consolation for his painful and irreparable loss.

OUR BOOK TABLE.

Summit County (Ohio) Horticultural Society.—Annual Report, giving the papers read and the discussion thereon at the monthly meetings of this flourishing society. Several of the essays are replete with valuable and interesting information. The secretary, Mr. L. B. Pierce, and other prominent members, are regular contributers to our columns.

The "Continent" Campaign Memorandum Book, published by the *Continent Magazine*, 25 Clinton Place, New-York. Every sensible man needs some convenient method of keeping brief memoranda of political events during a presidential campaign. This little book is designed for that very purpose. It contains a list of all the Delegates to the Republican Convention at Chicago, arranged by States, and is conveniently arranged for entering the dates of canvasses, meetings, time of registration, and other things that one should keep a record of pertaining to the campaign.

"Outing" for July comes along with the breath of the hills and the scent of summer flowers in it. The first article is an illustrated description of the Catskills, where one can still evidently find nature at her best, without getting beyond the bounds of civilization. The various cycling descriptions are particularly readable. Hunting and fishing each receive a light and amusing illustrated sketch, and canoeists will be pleased with a practical article, with designs to show how an amateur with a knack at carpentering can build himself a canvas canoe for five dollars that will do good service. Summer botanizing, by Professor Bailey, is full of information for outdoor students, while the amenities have their usual lively character.

American Pomological Society, Session of 1883.—The handsome volume containing the proceedings of the Nineteenth Session of this Society, held in Philadelphia, in September last, comes promptly to hand, and the Secretary, *Prof. W. J. Beal*, of Lansing, Mich., deserves much credit in thus having expedited the work. The volume contains all the papers and essays read during the session, with full reports of all the discussions thereon, and the Society's revised Catalogue of Fruits. In the latter a beginning has been made in reforming some of the most objectionable names in the list according to President Wilder's excellent recommendations, and it is to be hoped that this reform will be further carried out and the amendments promptly and generally adopted. This Catalogue, the most complete and exact of its kind published anywhere, and invaluable to any one interested in fruit culture, is furnished free to all members of the Society.

Our Famous Women. *A. D. Worthington & Co., Hartford, Ct., publishers.* Sold by subscription.—An excellent work, well gotten up and well printed. The book contains the lives and deeds of thirty of America's greatest women, from Louisa M. Alcott down to Frances E. Willard, with such names as Charlotte Cushman, Mary Mapes Dodge, Lucretia Mott, Marion Harland, and Harriet Beecher Stowe scattered between. The work is written by twenty women, some of whom are themselves the subject of an article. Thus, Rose Terry Cooke writes upon Harriet Beecher Stowe and Harriet Prescott Spofford, while Mrs. Spofford writes upon Rose Terry Cooke and several others. Mrs. Stowe writes upon her sister, Catherine E. Beecher, and Mrs. A. D. T. Whitney. Kate Sanborn writes on Marion Harland, Mary A. Livermore on Anne Whitney, and Elizabeth Stuart Phelps upon Mrs. Livermore. The articles are well written, a fact which the prominence of their authors assures. The book also contains sixteen engraved portraits, by prominent artists, and are most of them good portraitures. The book is entertaining and instructive, and deserves the wide circulation which its own merit is certain to give it.

CATALOGUES RECEIVED.

Indiana State Fair, 1884.—Premium List of the annual fair to be held at Indianapolis, from September 29th to October 4th.

The Zimmerman Manufacturing Co., of Cincinnati, has issued a handsome Catalogue which explains fully the merits of their Fruit and Vegetable Evaporator. Any one interested in that industry will receive the Catalogue free by writing for it. It contains valuable information.

W. & J. Birkenhead, *Fern Nursery, Sale, near Manchester, England.*—This elegantly gotten up and richly illustrated catalogue of a hundred pages, gives a list of about every species and variety of Ferns found in cultivation anywhere, with prices at which they can be obtained. This is quite a unique catalogue, which shows what may be accomplished by specialists. The Hints on the Cultivation of Ferns are concise and practical, and of value to every one interested in the cultivation of these graceful plants.

ANSWERS TO CORRESPONDENTS.

Books on Fruit Culture.—*D. P., Chetopa, Kansas.*—"Barry's Fruit Garden" is the best work on general fruit culture; price, $2.50. "Fuller's Small Fruit Culturist" is the most concise and best practical work on the culture of Strawberries and all other small Fruits; price $1.50. "Roe's Success with Small Fruits," price $5.00, is a much larger, richly illustrated, and elegantly written work.

Preparing for Asparagus.—*E. V. M., Warwarsing, N. Y.*—If the ground where the bed is to be made is not occupied now, keep it summer-fallowed, and at every plowing turn under a liberal dressing of yard manure. Plant about October first. If not cramped for space plant in rows four feet apart and allow two feet between the plants in the rows. Of course they may be placed closer, but Asparagus, to produce best results, must have plenty of room.

Cut-worms.—*L. F., Fergus Falls, Minn.*—Cut-worms are among the garden pests most difficult to destroy or guard against. Dr. Oemler, of Georgia, recommends dipping Cabbage or Turnip leaves in a bucket of water in which a tablespoonful of Paris Green has been stirred, and placing them in rows across the fields. He has in this way caught fifty-eight worms under one leaf, and by replacing the leaves every few days a field may soon be cleared of cut-worms.

Agapanthus.—*J. C. R. D., Rutland, Vt.*—This beautiful plant, which is far too little known, requires a treatment similar to the Calla. When growing and flowering it cannot have too much water, while after that period it should be kept rather dry. Once a year it should be shifted in a pot but little larger than the one it is growing in, using good, rich potting soil. They winter well in a cellar, but do equally well in a moderately warm room. They bloom best when exposed to full light and sun during summer.

Lilies, Amaryllis, Perennials.—*W. A. C.*—Lilium auratum, longiflorum, and other Lilies that have been grown in pots should, after flowering, be transferred to the open ground where they will bloom next year. All are hardy enough to stand the winters of the Middle and Southern States, yet a light covering will be beneficial.

Amaryllis Johnsoni is not hardy, and has to be taken up before winter sets in. It should be gradually dried off after flowering, and only watered again after repotting.

Seeds of *Perennials* may, as a rule, be sown immediately after maturity. Most kinds, if sown early in September, will make a good growth during autumn, and bloom next season. The young plants should be lightly covered during winter.

Lord & Thomas, the enterprising advertising agents of Chicago, have just issued a neat, beautifully enameled Pocket Rule for measuring advertisements. It combines inch, nonpareil, and agate measure, and serves at the same time as a rule and paper-cutter. The firm will mail it to any address for ten cents, and to their customers free.

A Rare Opportunity.—We wish to direct the attention of our readers to the advertisement of the sale by auction of Mr. George Such's collection of plants. This comprises the choicest and rarest and best-grown Orchids, Palms, Ferns, etc., to be found on this continent. So excellent a chance to obtain superb specimen and other greenhouse plants at a low price does not occur often in a life-time.

An Excellent Insecticide.—*Mr. A. S. Fuller*, the eminent horticulturist, writes: "I have been experimenting this season with BUHACH, the California Insect Exterminator, and am much pleased with the results. It is efficacious in destroying the various species of plant lice, such as *Aphides* and *Thripedæ* and similar small and soft-bodied insects. Some large climbing Roses that were badly infested with aphis and thrips were entirely cleared of their enemies by one dusting with Buhach, and I am fully satisfied that this California product is a most excellent and withal very convenient insecticide."

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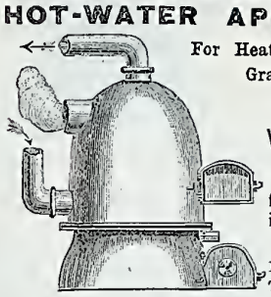

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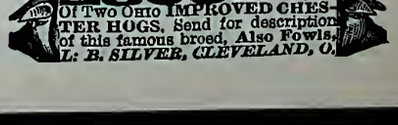

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Cauliflower, Earliest Paris	15	1 00	3 50	12 00
— Sea Foam (Extra Early, New and Fine)	50	10 00		
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— Early Dwarf Erfurt	25	2 00	7 00	24 00
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— California Mammoth White	5	10	20	1 25
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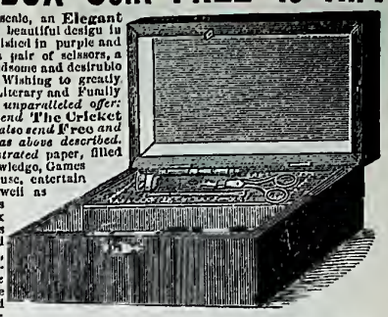

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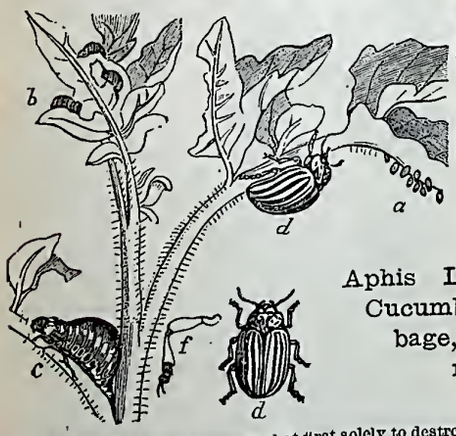

Ready for use and safe.

GUARANTEED TO DESTROY

Potato Bugs, Chinch Bugs, Rose Bugs, Slugs,

Aphis Lice, Worms, Caterpillars, and the Striped Bug upon Melons, Cucumbers, Squash and all insects injurious to Grape Vines, Cabbage, Tobacco, Cotton, or Egg Plants, Currants, Fruit or Ornamental Trees, Rose Bushes, and all Shrubs, Greenhouse, and Hardy Flowering Plants.

SLUG SHOT was prepared at first solely to destroy the Potato Bug in gardens, but its valuable properties for the destruction of all kinds of insects, caterpillars, and other vermin, have induced the inventors to manufacture it on a large scale, by which it is offered at a reduced price (as cheap or cheaper than Paris Green), and always of uniform strength, and ready for immediate use without the trouble of mixing.

SLUG SHOT contains, in minutest quantity, **POISON!** destructive to all insect life, which is most thoroughly diffused through natural and chemical fertilizers. The insect eats it in the minutest quantity, and then appears to become paralyzed, often *dying on the leaf without falling* and kills the bug in all stages of its growth.

It is an impalpable powder, and *does not harm vegetation*; on the other hand, it is a manure. *Dust it on the plants plentifully*, either by hand or with a dusting-tin *to the ground.*

You can easily make a duster by taking an old fruit can, perforating the bottom, and nailing the can to a stick.

QUANTITY TO AN ACRE.

When plants are small, about 20 pounds are needed; or, *take a handful and throw it over each hill, covering the leaves.* It does no harm to plants, but, on the contrary, invigorates them greatly.

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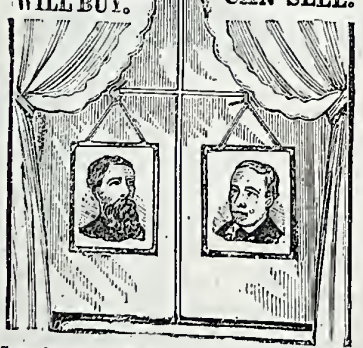

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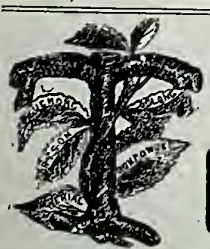

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor. B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, AUGUST, 1884. No. 8.

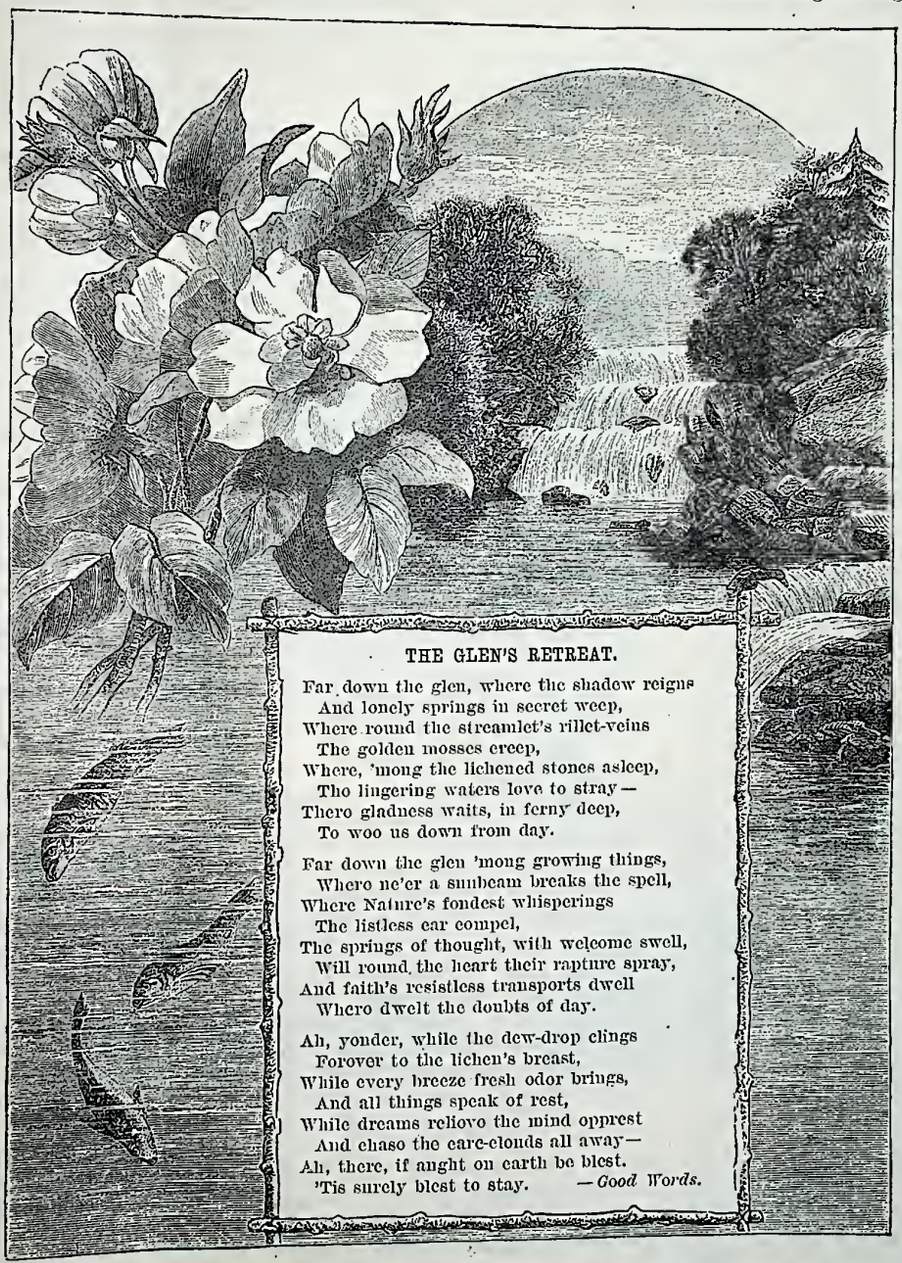
VACATION AT HOME.

"Where shall we spend our summer vacation?" has been a question occupying thousands of city and country residents during the past month. An occasional change of scenes, surroundings, and occupation is beneficial, if not absolutely necessary, to every one. The constant running in the same grooves dulls and sours our minds, as much so as a pot-plant, growing in the same soil without change, becomes debilitated and sickly.

The sea-shore, the mountain regions, watering-places, foreign lands, and an endless variety of other pleasure resorts, offer an unlimited amount of attractions to those possessing sufficient means for their enjoyment. But what shall those do whose circumstances compel them to stay at home; shall they give way to despair and complaints about the hardship of their lot? By no means. The degree of enjoyment and pleasure life offers us is fortunately not proportionate to the size of our bank account, but depends mainly upon ourselves. "The world is as we make it."

Few, comparatively, are aware of the capabilities and facilities for enjoyment at home and in one's own neighborhood. In most large cities there are valuable collections of objects of art, science, industry, etc., of interest to every intelligent person; yet many city residents are entirely ignorant of their existence, and are only made aware of it when visiting friends make inquiry about them. Then only, in order to entertain their guests, they discover the vast resources for enjoyment at home.

No one is so fettered by circumstances that he cannot, during a part of the year at least, devote a whole or half a day each week to wholesome, inexpensive recreation. A visit to the libraries, the museums, the art galleries, the parks, short trips to the country, are within the reach of all, and can be made as productive of enjoyment as an extended journey, provided one's heart is in it.



THE GLEN'S RETREAT.

Far down the glen, where the shadow reigns
And lonely springs in secret weep,
Where round the streamlet's rillet-veins
The golden mosses creep,
Where, 'mong the lichened stones asleep,
The lingering waters love to stray—
There gladness waits, in ferny deep,
To woo us down from day.

Far down the glen 'mong growing things,
Where ne'er a sunbeam breaks the spell,
Where Nature's fondest whisperings
The listless ear compel,
The springs of thought, with welcome swell,
Will round the heart their rapture spray,
And faith's resistless transports dwell
Where dwelt the doubts of day.

Ah, yonder, while the dew-drop clings
Forever to the lichen's breast,
While every breeze fresh odor brings,
And all things speak of rest,
While dreams relieve the mind oppress
And chase the care-clouds all away—
Ah, there, if aught on earth be blest,
'Tis surely blest to stay. —*Good Words.*

But those who start out for a day's excursion, and are all the time lamenting that they must return to the city at night, and that the hours are not weeks, and that they do not have money enough to go to Europe, might as well stay at home. They belong to that unfortunate class of people who never enjoy what they have, and live only in the expectancy of the unattainable; they would not be happier if they had millions, for happiness is not in their hearts. The sun shines as bright, and warms the earth for rich as well as poor; seasons come and go; trees grow, and offer shade and rest under their graceful foliage; flowers expand and spread their fragrance; birds sing their sweetest tunes; and nature's beauty is spread out everywhere for king and beggar alike.

Not less are vacations needed by farmers and others who live in the country summer and winter. However beautiful the landscape, and salubrious the location may be, a change and new impressions are as necessary to the country resident as to the city dweller. Those living within easy reach of a large city will find an occasional day's visit to it—for the sole purpose of recreation—a most delightful diversion, but the vacation must be complete, and not partly devoted to business.

Then, how few persons living in the country are familiar with all but their immediate neighborhood. An hour's walk or drive away from the ordinary roads of travel would frequently bring them to undreamed-of beautiful scenery and charming surprises, and the thus discovered landscape, the shady grove with its grand old trees, the lovely lake, or mossy glen may all be enjoyed as much as if they were a hundred miles away. The home garden itself may be made to furnish no small amount of recreation, by carrying out long-deferred plans and improvements, tidying up everything, having a kind of outdoor house-cleaning, and in many ways different from the every-day routine work.

No two persons would probably agree entirely upon the same mode of taking a vacation; what would afford delightful recreation to one might prove tedious to another; every one must take it, as far as feasible, according to his individual inclinations; but in whatever way you take it, *do* take a vacation.

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The Vegetable Garden.

SEASONABLE HINTS.

Head Lettuce in summer can only be produced under special care, as Lettuce is naturally a cool-climate plant which, in our hot, dry summers, will, under ordinary conditions, go to seed quickly; and yet, in our large city markets, large heads of Lettuce are offered for sale nearly every day in the year. To grow good Lettuce in summer requires a deep, mellow, loamy soil, plentifully enriched with decomposed yard manure, and in dry weather the beds have to be thoroughly watered every evening. The plants must have plenty of room—twelve inches each way—and sowings during midsummer prove generally more successful if they are made where the plants are to remain, without transplanting, thinning them out merely to the desired distances. There are only few varieties suitable for summer cultivation. *Salamander* and *Deacon* are the best of a large number we have experimented with.

Celery.—For fall and early winter use Celery is planted at intervals during July; but for a winter supply nothing is gained by planting before the first of this month. Very rich, deep soil and plenty of water are the principal requisites for success with this delicious vegetable, and without these it is almost useless to attempt its culture.

The old method of planting Celery in deep trenches has been almost entirely abandoned, saving a very great amount of labor and accomplishing as satisfactory results. When pricked out or transplanted plants can be procured, they are far preferable to those directly from the seed bed, as with these there is seldom any loss in transplanting; they suffer less in dry weather, and may be planted at any time, while ordinary plants cannot be set out safely except during damp or rainy weather.

When all is ready,—that is, when the ground has been made as rich and mellow as possible,—stretch a line (never plant a crooked row of Celery), and along this set out the young plants five or six inches apart, the latter distance being the best. Cut off half of the tops, and the ends of all roots that are over three inches long; then plant with a transplanting stick or dibble, and press the soil around the roots as firmly as possible. If the subsequent days should be very dry, watering may be necessary evenings, and light shading during midday.

Exterminating Sorrel.—"To kill Sorrel, make the land rich and cultivate it well," said a farmer in our hearing, and this dictum corresponds with the popular idea of the nature of Sorrel. So far as the part of cultivation is concerned it is correct enough—thorough and persistent cultivation will free the ground from any and every weed—but that Sorrel grows better on poor than on rich soil is an erroneous theory, not based upon facts. It is true enough that Sorrel will grow on soil so poor that few other plants could find food enough for sustenance; but just give such a sorrel-infested ground a dressing of manure, and you will soon become aware that the weed responds as quickly to fertilizing influences as any useful plant. Cultivation is what kills Sorrel, not manure.

TRIALS WITH INSECTS.

Perhaps nothing has a stronger tendency to dampen the enthusiasm of the amateur gardener than to find the favorite plants that have been developing so beautifully under his careful attendance suddenly attacked and disfigured by a swarm of greedy, repulsive insects; but it is one of the troubles that every gardener must expect to meet. Our Cabbages have their caterpillars and beetles, our Cucumbers their striped bugs and borers, and our fruits their curculios, aphides, and codling moths. Our success in growing these crops depends in no small degree upon our knowledge of insecticides, and our vigilance in applying them. For the benefit of those who are seeking information in this direction, I offer some of the results of my own experience as a practical gardener.

THE CABBAGE CATERPILLAR.

For this caterpillar, the larva of *Pieris Rapæ*, I have used Buhach powder, applied with the Woodason bellows, with complete success. Pyrethrum powder, which is nearly the same thing, is also acknowledged to be an equally valuable agent for destroying this insect. If the powder is fresh and pure, which it not always is when purchased at the stores, it is strong enough to perform its work when mixed with several times its weight of flour, air-slacked lime, or any other fine light powder, by which means the cost of the application may be much reduced. The mixture is said to be more efficacious if allowed to remain in an air-tight vessel for a few hours before using. In the absence of the bellows, it may be applied by sifting it through a fine sieve, or by simply dusting it over the plants by hand. This application has the very great advantage of being non-poisonous to the human family, hence accidents in its use can hardly prove injurious to either man or beast.

THE TURNIP FLEA-BEETLE.

For this little pest, *Haltica striolata*, so destructive to the young plants of Turnip, Cabbage, and Radish, I know of no application better than air-slacked lime, dusted over the plants while they are wet. I usually wet the plants from the sprinkler, as far as possible applying the water and the lime to both sides of the leaves. Strong tobacco-water, if applied daily, will prove equally efficacious, and it also seems to stimulate the growth of the plants. I have also used a weak kerosene emulsion, which answers the purpose in keeping off the beetle; but, when used on Radishes, it evidently retarded the growth of the roots. Perhaps the best way of all for avoiding this pest is to inclose our plants subject to its attacks in frames made of boards a foot wide. I have practiced this method with excellent success.

THE RADISH FLY.

Those who attempt to grow early Radishes on heavy soils are much troubled by the attacks of the Radish fly (*Anthomyia Radicum*), which lays its eggs upon the young roots at the surface of the ground, thus infesting them with the little maggots that so often destroy the roots for table use. I know of no practicable remedy for this pest, but by lightening the soil of the Radish bed with a very liberal application of coal ashes, the injurious attacks may be in a great measure prevented.

CUCUMBER AND MELON BEETLES.

Perhaps none of our garden plants are more harassed by insects than the Squash, Cucumber, and Melon. Unless protected by the gardener, the early life of these plants is a constant warfare; and often, in case of the Squash at least, this warfare does not cease until frost puts an end to the conflict. Surely, in the case of these plants, prevention is better than cure. For the kitchen gardener, the sure way is to protect the hills of these plants with small board frames covered with mosquito netting. The market-grower may circumvent his enemy by starting his plants upon inverted sods in the cold frame, transplanting them, when sufficiently large, to the garden.

To those who see fit to take neither of these precautions, I can recommend no better application than Paris green and water, at the rate of half a teaspoonful of the former to two gallons of the latter, applying the mixture with care to both sides of the leaves.

THE SQUASH BORER.

One of the most incorrigible of insects, in our present state of knowledge, is the Squash-vine borer (*Melittia Cucurbita*). This enemy does its mischief concealed in the heart of the stem, where we cannot hope to reach him with poisonous applications. To cut the worm out by slitting the stem is both costly to the grower and dangerous to the plant. I can see but one valid hope for a successful attack upon this insect, viz., to poison the newly hatched grub as it eats its way into the stem. I have used Paris green mixed with water, at about the proportion named above, pouring the liquid upon the stems for a distance of two feet from the base of the plant, with what seemed in a limited trial to be very great benefit; and while I cannot say this treatment will prove a sure remedy for the evil, I would recommend all interested to aid me in giving it further trial. "Elm."

PROTECTING CABBAGE AND CAULIFLOWER.

For many years it has been nearly impossible to raise early Cabbages and Cauliflowers in our locality, in consequence of the ravages of a white maggot that eats the stalk of the young plants. More than three-fourths of all our early plants have heretofore been destroyed by this pest. This year I tried an experiment with whale-oil soap mixed with kerosene, and found it a most gratifying success. In no case was the mixture applied more than twice, which proved sufficient to save nearly every plant. The soap may be so much diluted that the expense for the material is but trifling, and I hope other readers will give it a trial and report results. H. J. Seymour.

SALTPETER AGAINST THE SQUASH BORER.

A solution of an ounce of saltpeter in a gallon of water is recommended as a preventive against the borer. As soon as the young plants appear above ground, the solution is poured over them in sufficient quality to saturate the ground. This should be repeated at intervals of four or five days. Three or four such applications are said to be sufficient to protect the plants, and the saltpeter itself is rather beneficial to their growth than otherwise.

LEEK.

For an early crop I sow the seed in boxes in the greenhouse, and when the plants have three or four leaves, set them in the open ground about the time of sowing the seed for the main crop. Before planting, I cut off half the top and half the roots, which makes them much easier to transplant and prevents wilting so badly.

Most people who use them prefer the London Leek. The transplanting of Leeks is a benefit to the plants, by giving them a deeper hold in the soil, and so increasing the bleached portion; for, although the whole plant is edible, there is an advantage in having a strong, large body as well. For the fall crop I transplant in July, in rich soil, three inches apart, in rows one foot wide.

The summer treatment consists in only to keep the weeds down and the ground mellow. I begin to market the early plants the last of July, when the stalk is as thick as the little finger. Bunches of five each sell for fifty cents per dozen, and retail at five cents a bunch from this time on.

The fall crop is gathered by plowing close to the rows with a light plow, and throwing them out with a six-tined fork or spade. They cannot be pulled, as the roots are strong in the soil. Before lifting, I go through the rows and pull or cut off the leaves of the tops. This is an important precaution, as that part would wilt and decay in winter, and is cut off when they are fitted for market; it also lessens the bulk and prevents their heating and rotting so readily. They are dug on dry and sunny days, brought at once into the winter house or cellar, set closely together—not packed—on the surface of the ground, in an upright position, without putting soil about them. The moisture of the earth and air, and the limited light they receive in a temperature of 40°, keep them "green as a Leek" all winter long. Before spring the roots will have taken hold of the soil, and the supply can be kept good till April, and sometimes later. There are but two months in the year when I do not have Leeks to sell.

For the land occupied, and the time given to the crop, with no insects or worms to eat them, and only the dry summer weather to contend with, I consider Leeks a very profitable crop. One ounce of seed will produce two thousand good, strong plants. It does not pay to set out the little ones; they do not grow big by fall, and the big ones will bring, as I said, fifty cents for sixty roots. The smaller roots, bunched to equal weight with the larger ones, bring as much per dozen, but it costs more to prepare them for market, and the big ones crowd them out of market, as most customers prefer large Leeks. There is only a limited demand for Leeks, but when a market is secured, they pay well for the time given to their cultivation, provided one can keep up a steady supply.

The principal variety grown, and the one preferred in our markets, is the *London Flag Leek;* it has a larger body and greener top than any other.

Extra large Carentan is a newer kind, of extraordinary size and large leaf growth, but not as heavy in body.

Large American Flag and *Large Rouen* are also well-known varieties grown by market gardeners, as well as in private gardens.

W. H. Bull.

LARGE CARENTAN LEEK.

HARVESTING AND STORING POTATOES.

I dig Potatoes as soon as the tubers have matured, which is indicated by the dying of the vines. I have dug Potatoes when the vines were green, but this was under exceptional circumstances; and generally the tubers should not be disturbed till the vines are altogether dead; then they should be taken from the ground at once. There is no longer any increase in the size of the tuber, and the best quality is secured by a speedy harvesting. Those who leave the tubers in the ground longer, generally do so through fear of the Potatoes rotting if stored. But proper storing will never cause a matured tuber to rot.

I have found no better Potato-digger than an 8-inch diamond plow attached to a gentle horse. The plow must be sharp, and set to run so deep that it will pass under all of the Potatoes. I plant my Potatoes in drills—the way Potatoes should be planted. I plow a furrow along each side of the drill, just up to the Potatoes. Then two more furrows will turn the drill upside down and expose the Potatoes. I find that fewer are cut with the plow than when a hoe, spade, or fork is used. If you think the gatherers have missed any, harrow the patch, and the missing Potatoes will be brought to the surface. But the plow turns up the Potatoes so effectually that harrowing the ground is rarely necessary.

The less soil adhering to the Potatoes the better. The amount of earth adhering depends upon the character of the soil and the amount of moisture in it. Some soils are sticky. The more moisture in the earth, the more it will adhere. Therefore, Potatoes should not be dug when the ground is wet.

As fast as dug, the tubers should be placed in a heap in one corner of the field. If it is hot weather, they must be protected from the rays of the sun by a covering of boards or boughs. I leave the tubers in a pile until they are thoroughly dried on the surface. Then, if in the summer or early fall, I remove them to a shed, the barn, or perhaps the smoke-house—any building where they will have plenty of air and be shaded from the sun. When moving them this time, I pick them up by hand, pull off the roots, and rub off all earth. To do this may seem unimportant, but I can testify that it adds greatly to the keeping qualities. I leave the Potatoes in the shed or barn until there is danger of their being frozen, when I store them in the cellar. Potatoes should be handled with care, and none but a *wooden* shovel should be used.

I believe that Potatoes, and Apples, are finer flavored when buried in the ground than when kept over winter in a cellar; but I put mine in a cellar because I have a most excellent one, and to do so is most convenient. The floor of my cellar is perfectly dry, yet I elevate the potato-bins above it. The corner posts of the bins I make three feet and one-half long. The floors of the bins are placed two feet from the ground, leaving the bins one and one-half feet deep—as deep as they should be. I use no straw in the bins, as it draws damp and favors mice. If barrels are used for storing Potatoes in, they should be set upon blocks. Potatoes keep best in the dark. By observing the directions here given, I never have any difficulty in keeping Potatoes in good condition.

John M. Stahl.

The Fruit Garden.

SEASONABLE HINTS.

Summer Pruning of Raspberries and Blackberries consists in topping the young canes when they have reached a height of two and a half to three feet. They will then throw out side shoots, which, in turn, have to be pinched in when ten to twelve inches long. This pruning makes the canes stockier, so that they will stand up under a heavy load of fruit without stakes or trellises. If more than four young shoots come from a stool, they should be cut out. The fruit from these will be larger than when all are allowed to grow.

Old Canes.—There is some difference of opinion as to the best time for removing the old Raspberry and Blackberry canes. Formerly it was thought necessary to cut them out as soon after bearing as possible, so as to direct all the strength of the roots to the new canes; but now, high authority claims that the withering canes are still of value to the roots and young growth. Accurate experiments being wanting, we incline to the opinion that the benefits resulting from leaving the old canes till the following spring can at best be but little, and are fully overbalanced by the inconvenience and annoyance they cause. They surely look anything but tidy, and are a hindrance to the full expansion of the young canes.

Killing Blackberries.—The eradication of old Blackberry plantations and briers along neglected fences is, as generally conducted, a most troublesome and annoying operation, but if the bushes are cut off from the middle to the last of August, close to the ground, few will sprout again. Some years ago, we wished to clear an old Blackberry field that was badly affected with rust. Immediately after the last picking, we cut off all the old and new growth, forked it into heaps, and burned it. Some new sprouts sprung up, which, when about a foot high, were mowed off again. Nothing else was done during the summer. The following spring, the roots were dead and in a decaying condition; there was no difficulty in plowing the ground, and the crop of Potatoes which grew on it that year was one of the best we have ever raised.

Pistillate Strawberries.—It is now believed that the size and quality of pistillate varieties are more affected by character of the staminate variety with which they are fertilized than was formerly supposed. Although sufficiently conclusive proofs are still wanting, it is well to give some attention to this matter when planting pistillate varieties. In a series of experiments made by several prominent fruit-growers, it was found that Crescent and Manchester became firmer when planted near Wilson, larger near Sharpless, and of better quality when fertilized with high-flavored varieties. Differences in the quality of certain varieties which have hitherto been attributed solely to the character of soil and climate may have been owing to causes of this kind. This is a most important and interesting subject, and it is much to be desired that accurate and extensive experiments will lead to definite results.

Grapevines should not be pruned severely at this season. Pinching in of the end and side shoots is sufficient, and these should never be cut back farther than to the lowest leaf.

NEW STRAWBERRY BEDS.

The gardener who grows but a few Strawberries for home use is quite apt to let the bed take care of itself after it has become an established institution. I know of many beds that are from five to ten years old, and the only care bestowed upon them is in pulling or mowing off the weeds that would otherwise bury the vines from sight. The berries are getting smaller and fewer every year, and soon they will be no better than the wild ones in the meadows.

In the first place, a bed should not be allowed to get into such a tangled, matted condition. I know it seems hard to go in and cut out a splendid growth of vines that is trying to occupy the ground space between the rows; but it must be done, and the boundary lines vigorously established and maintained, or the patch will quickly become unmanageable. Let each row have a strip about a foot wide, and then confine the plants to that by cutting out the remaining space between the rows each fall, after the season's growth is over. This leaves a chance for cultivation, and for working in manure about the rows. If the plants become too matted in the row, it is an easy matter to cut out narrow spaces with the hoe or other implement. Beds that are kept cut back in this way need mulching especially. A matted bed, with more or less weeds and grass on the surface of the ground, will furnish pretty much all the mulching needed of itself; but a patch that is kept well trimmed must be mulched, or it will suffer from the frosts and thaws of winter.

But beds will run out with the best of care, and should never be left more than three years, and many good growers advocate but two. If well cared for, I find that they will do as well the third year as the second, and I don't like to move any oftener than is really necessary. If the white grubs get into a patch, plow it up, if it has been in bearing but a year. Where these troublesome pests abound, beds will have to be renewed often, for every year the eggs of the beetle, from which come the grubs, will be deposited afresh. I think, too, that, unless very intelligently managed, a piece of ground will soon become exhausted in those particular properties demanded by the Strawberry. Rotation of crops is as necessary here as elsewhere.

It is no great task to set out a bed large enough to supply an ordinary family. The ground should first be made thoroughly rich and mellow; then mark out the rows with a rake marker that will not press the earth down, but push it aside and leave a little furrow in which to set the plants. In setting out, a little care should be exercised in spreading the roots somewhat before filling in and pressing down the earth. I have noticed many in setting out such plants "chuck" them down in a little bunch, or with the roots all hanging off to one side, just as they happen to come.

Early in the fall is a good time for setting out Strawberry plants, provided it is not too dry. Set them out as soon as the weather is moist enough, and they will get a good start before cold weather sets in. Then, if they are well mulched, they will stand the winter in good shape. There is usually more time for such work in the fall than in the spring, and the ground is in better condition to work.

There is no fruit more easily grown than the Strawberry. It is just the fruit for those to grew who have only a limited amount of space at their disposal. Every garden, whether on the farm or in the village and town, should have its Strawberry bed.

W. D. Beynton.

IMPERFECT GRAPE FERTILIZATION.

A correspondent in Herkimer Co., N. Y., writes: "I have a Brighton Grape-vine, seven years old, located on the south side of my house in sandy loam soil. It has been spur-pruned, and when it should have fruited, the stamens were deformed and the bunches of Grapes very imperfect.

"Is this defect rare with the Brighton, and is there any remedy?

"Has soil, location, or method of pruning anything to do with the cause of this defect?"

REPLY BY E. WILLIAMS.

This must be an exceptional case, as, in all my experience and observation with the Brighton, it rarely failed to make full and perfect clusters. If summer pruning has not been properly performed, it is quite probable that the buds on the spurs were weak and destitute of sufficient vitality; hence the difficulty. If strong, well-developed base-buds will be secured on the canes, I think there will be no trouble ordinarily in securing perfect clusters with this system of spur-pruning.

A recent writer, in giving instructions how to prune a vine, makes this statement:

"Shoots from the axillary buds, where the old and new wood are joined, will hardly ever produce fruit. The first bud beyond an axil will be found fruitful, but the clusters that grow from the next bud and several further on will generally be the shouldered bunches of the crop."

This is a loose statement, and is only true or partially so when applied to vines allowed to grow at random after the winter pruning, and not true in regard to vines properly checked by judicious summer pruning. The axillary buds on vines thus treated will not only prove fruitful, but the clusters will be found to be as good as any others, and spur-pruning on such vines only will be found entirely satisfactory. In other words, short spur-pruning, *i. e.*, two buds, and summer pruning must go together to secure best results.

If I have suggested the cause of your correspondent's difficulty, I have also suggested the remedy. But we have other varieties in which this defect seems to be inherent or constitutional; prominent among which are Agawam, Lindley, Massasoit, Black Eagle, Defiance, etc. These, with me, produce imperfect clusters more frequently than perfect ones. They promise well in the bud, and if the promises were carried out in the blooming and setting, or rather in holding on,—for it may be said that a Grape is set before it blooms,—three-quarter or even pound clusters of those varieties would not be unusual.

Vines badly affected with mildew last year show its effect this season, in impaired vigor and imperfect clusters. The *Wilder*, which is generally very satisfactory in cluster, is this season complained of on all sides as making poor clusters. A neighbor, who has heretofore been remarkably successful with it, reports an entire failure this season, though the early promise was as good as usual. I

can only account for this failure by a weakened vitality; and if this is the true cause, may not the failure of the others be attributable to it also?

I noticed this season that the imperfect clusters retained the caps of the blossoms on the unfertilized berries after the others had commenced to grow. The caps had all started, but the stamens seemed to lack the power to push them off, and possibly, being destitute of pollen also, fructification failed in consequence, and the retention of the caps prevented their more vigorous neighbors from performing this office for them, and failure followed.

It is quite possible the above and similar varieties are weak in this particular respect, and the fact that in the hands of some cultivators they produce good clusters, would seem to indicate that this imperfection, whatever its cause, can be overcome with proper treatment.

These views, though somewhat theoretical, seem reasonable to me; and I hope others who have given the subject longer and more thorough investigation will continue the discussion.

THE PARRY STRAWBERRY.

No other class of Strawberries combines probably so many desirable qualities as the strain originated by Mr. E. W. Durand, and best known by Jersey Queen, Prince of Berries, and others. To this is now added another variety, which, while it possesses all the excellent points of its parent, the Jersey Queen, has the other great merit of being perfect flowered, and therefore not requiring another kind for fertilization.

The Parry was raised in 1880 by Mr. Wm. Parry of New Jersey, from seed of the Jersey Queen, and the following year it yielded already handsome fruit, which was awarded a premium at the Moorestown Strawberry Fair. After harvest, the unprecedented heat and drought destroyed almost every variety in the same plot except this, thus showing its hardiness, vigor, and drought-resisting powers.

The plant is a rank, vigorous grower, with clean foliage and perfect blossoms; berries, obtuse conical, very large, uniform in size and shape, bright, glossy crimson, firm, of best quality, and ripening evenly. It was originally named "Junior Queen," but at the suggestion of the Hon. Marshall P. Wilder, it was changed to "Parry," under which name it is now introduced.

Mr. Durand, the originator of the Jersey Queen, after growing it on light and heavy soils considers it the most valuable Strawberry that has yet appeared before the public.

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THE PARRY STRAWBERRY.

IRRIGATION.

What Colorado people term the "Methodist" system of irrigation is in common use all over the country by amateur gardeners and lady florists; but, at the best, the watering of gardens and flower-beds by sprinkling with a watering-can is unsatisfactory and laborious, especially where the water must be drawn from wells. To attempt to water a large market-garden or berry field, even with a horse-sprinkler, is nearly out of the question; yet thousands of people over that portion of the United States where systematic irrigation is not generally necessary, feel at times the need of water to tide their more valuable fruits and vegetables through temporary drought.

At the last meeting of the Mississippi Valley Horticultural Society in Kansas City, this subject was discussed at length, and some valuable facts brought to light. I was especially interested in what was said in reference to what is called sub-irrigation. This consists in laying drain tiles beneath the rows, and conducting the water into these, instead of distributing it by surface ditches. Several gentlemen agreed that it only took one-tenth as much water in sub-irrigation as it did in surface irrigation.

Porous two-inch drain tiles are laid six or eight inches beneath the rows of Strawberries or vegetables, which are two feet apart. Water is let into the pipes needed, and the joints being cemented, it gradually works out through the pores of the tile and is absorbed by the roots of the plants. One gentleman stated that he watered his flower-beds by sinking porous flower-pots among his plants, plugging up the holes and filling with water at night, allowing it to filter through the sides gradually. The pots were covered with pieces of board to prevent evaporation.

An interesting account was given of the operations of the Messrs. Smith, market gardeners at Green Bay, Wisconsin. Mr. J. M. Smith, President of the Wisconsin State Horticultural Society, who cultivates thirteen acres of ground, has provided himself with a windmill and tanks, and irrigates when necessary. It requires one thousand barrels of water to thoroughly saturate the thirteen acres. His sons, near by, use a steam-engine to elevate the water. Their outfit of engine, storage tank, distributing pipe, and hose cost about five hundred dollars, and the engine is so much more reliable than a windmill, that Mr. Smith's son proposes to get one also.

Windmills are now thickly dotted over the country, and many a gardener, by providing an elevated storage tank and a distributing pipe, could put his crops beyond the reach of drought. For growing first-class Strawberries, Cauliflowers, Celery, and some other crops, a supply of water is an absolute necessity.

L. B. PIERCE.

REVISED FRUIT NOMENCLATURE.

As a beginning to simplify and condense the names of fruits as much as possible, according to the suggestions of President Marshall P. Wilder, the American Pomological Society has in its latest catalogue made the following changes in the names of small fruits. The revised names will hereafter be used in THE AMERICAN GARDEN, and it is much to be desired that they will at once be generally adopted.

STRAWBERRIES.

New Name.	*Old Name.*
Cumberland	Cumberland Triumph.
Hovey	Hovey's Seedling.
Miner	Miner's Great Prolific.
Monarch	Monarch of the West.
Neuman	Neuman's Prolific.
Wilder	President Wilder.
Wilson	Wilson's Albany.

RASPBERRIES.

Fontenay	Belle de Fontenay.
Kenovett	Kenevott's Giant.
Orange	Brinckle's Orange.
Palluau	Belle de Palluau.

CURRANTS.

Angers	Fertile d'Angers.
Knight's Red	Knight's Large Red.
Palluau	Fertile de Palluau.
Versaillaise	La Versaillaise.

GOOSEBERRIES.

Smith	Smith's Improved.

The Flower Garden.

DAISIES IN THE CITY.

Away from the soil that here them,
  Away from the waving grass,
Away from the winds that kissed them,
  Down in the meadow pass,
Away from the sun that gave them
  Their hearts of yellowest gold,
Away from the tears of heaven,
  And the love they nightly told.

Away from the song of the bobolink,
  Away from the song of the rain,
Away from the song of the reaper's scythe,
  As it sweeps through the golden grain,
Away from the song of the whirring bee,
  As it seeks the purple Clover,
Away from the song of the farmer's lass,
  As she sings of her farmer-lover.

Away from the smile of the summer sky,—
  Sweet recollections bringing;
For in the shadow of these walls,
  I hear the throstle singing;
I see the face of nature glow
  With all her brilliant treasures,
And I haunt the scenes of early years,
  And pursue my childhood's pleasures.

And my eyes are filled with tears,
  When in my casement spying,
These messengers from scented fields,
  And many hearts with sighing;
And some, perhaps, as I have caught
  From out their fragrance spreading,
The incense, which the fairer flowers,
  In heavenly fields, are shedding.

Howard N. Fuller.

SEASONABLE HINTS.

Mignonette.—This "Little Darling"—which is the meaning of its name—may be had in bloom the year round, and with comparatively little trouble. Seeds sown now in a bed of rich, deep and finely pulverized, rather sandy soil, will come up quickly and produce an abundance of deliciously fragrant flowers during the autumn months and, in sheltered situations, long after frosts have killed all tender vegetation. The seeds should be covered lightly but packed very firmly. To grow Mignonette to perfection it is absolutely necessary to allow each plant sufficient room for development in each direction. If sown broadcast, the plants should be thinned out so as to stand at least six inches apart each way; if in drills, these should be twelve inches apart, the seed sown very thinly, and the plants thinned out to six inches as least.

Biennials, plants that do not generally flower the first year, should be sown as soon as the seed is ripe, or the latter part of August and in September, so that the plants get strong enough before the setting in of winter. Many of them may be raised in the open ground, like hardy annuals, and transplanted, but choice kinds should be sown in pots or seed-pans. As they do not blossom the first year, they may be thinned out or removed from the seed-beds as soon as they are well rooted, and planted either into different parts of the garden or into a nursery bed, in rows, a foot or more apart; keep them clear of weeds by hoeing and stirring the earth occasionally, which will greatly promote their growth, and prepare them for transplanting in the autumn or following spring.

A LARGE PANSY.

Our illustration shows an accurate, natural-size representation of a Pansy flower raised by Mrs. W. A. Wheeler, of Allston, near Boston, Mass. The dried flower is preserved at our office, where it may be seen by any one in doubt about its size. Its shape, according to florists' rules, is not perfection, but its size we have never seen equaled.

With the exception of the Rose, no flower is so universally admired, and there is no good reason why a Pansy-bed should not be in every garden. To have beautiful Pansies next spring, the seed should be sown this month, and in September for early summer blooming. For those who really love Pansies, and will give them loving care, there is not the least difficulty in raising them. A partly shaded situation, but not under the drip of trees, is best for their full development. They require a deep, rich loam, mixed with a small portion of sand. As soon as the young plants are large enough to be handled they should be transplanted, ten or twelve inches apart each way, in a frame or some sheltered position where they can be slightly protected during winter.

A LARGE PANSY.
(Natural size.)

WATERING SMALL GARDENS.

A rubber hose is generally the most available means for watering gardens in towns and villages in which there are public waterworks. But this is so expensive that people of moderate means do not use it extensively. As a substitute for rubber hose I have employed half-inch iron pipe, with very satisfactory results. From the water-pipe in the street to the rear end of my garden, the distance is over three hundred feet. Last year there was not a day, during the entire growing season, when any portion of the garden needed water; but the season previous we had no rain for more than six weeks. During such dry and hot weather the garden needed water almost every day.

As a substitute for hose, I purchased two hundred feet of half-inch iron pipe, in lengths of about sixteen feet each, at $3.75 per hundred feet. Galvanized pipe usually costs twice as much as the plain iron. To keep the pipe from rusting, a heavy coat of paint was applied to the outside; but pitch or coal-tar, applied boiling hot, will be cheaper and more durable than paint.

Now, instead of burying the pipe in the ground, I laid it on the surface and screwed the lengths together, thus forming a line of pipe from a faucet in the kitchen to the rear end of the garden. About every fifty feet, there is a **T**-coupling, provided with a short piece of pipe, say six inches long, the ends of which are closed by an iron cap screwed on the end of each short piece where there is a **T**. By opening the faucet in the kitchen, water will rush in a minute to the farther end of the garden. Now we attach a hose, ten feet long, to any part of the pipe where there is a **T**, and with that an abundant supply of water can be directed to any part of the grounds. As soon as one part of the garden has been watered sufficiently, unscrew the short hose from the **T**, screw on the iron cap, and carry the hose to the next **T**, remove the cap and screw on the hose, and throw water fifty feet or more on both sides of the line of iron pipe. At the close of the growing season, unscrew the lengths of iron pipe and store them under the floor of a veranda or in the garret until wanted another season.

Iron pipe, couplings, **L**s, joints, connections, **T**s, and caps can be found in almost any city, and subserve just as satisfactory purpose as rubber hose, which would cost four times as much. More than this, rubber hose several hundred feet long is very inconvenient to handle; it will become bent, kinked, and often damaged in a short time, so that it will leak like a basket. But iron pipe can be unscrewed, placed in different directions, and may be allowed to remain where it is laid for several months without being damaged by the weather.

S. E. T.

A PRETTY CARPETING PLANT.

Tiarella cordifolia.

In rich, rocky woods from Maine to Wisconsin, northward, and southward along the mountains, grows this pretty plant, which, though perhaps unknown to all but a very few of our readers, is thus praised by the *Garden* of London:

This elegant little plant used to pass for a curiosity generally, and we did not think much of it till we happened to see a sparkling bunch of it in the gardens of Munstead. There the effect of its little, graceful, straight shoots and well-formed leaves was excellent, as it grew on a broken, rocky bank. Being so good in form, so free in its spikes of bloom, and so easily grown and increased, there is something in the plant likely to assist, in more ways than one, tasteful gardeners who are seeking interesting and pretty plants for quiet corners and for "carpets." It is easy to imagine various circumstances in which its delicate growth would be very welcome, either alone or beneath a plant of bolder growth.

ORNAMENTAL GOURDS.

The garden plants most generally grown under this name are botanically *Cucumis* or *Cucurbita*, the latter genus comprising the true Gourds.

While the foliage of the larger kinds is coarse and Squash-like, many of the smaller species are of delicate growth and are very ornamental. The flowers of all are yellow or white and last in perfection only a few hours. All are trailing or climbing annuals remarkable for luxuriant and rapid growth, and thus are very useful for covering trellises fences, stumps, or any unsightly object.

The fruit, the variety of which our illustration gives a good idea, is of many shapes; in some species of great size, in others very small, in color bright-yellow, green, white or variegated, as the case may be, and is in all the species very freely produced.

The seeds should be planted where they are to grow, after the ground has become warm, in rich soil, and if a season of drought comes during the summer they should be liberally watered.

The growth of a Gourd is proverbial, and the plants will soon cover any object near them, and by midsummer will begin to set fruit. The first frost kills the plants, but seldom before they have ripened an abundance of seed. The fruits of most species have a very hard shell and may be preserved for winter ornaments until they grow very dry, when the bright colors and markings fade.

Of *Cucumis* some of the best are *C. flexuosus*, the Snake Cucumber; *C. dipsaceus*, with teasel-like fruit; *C. Grossularia*, or Gooseberry fruited; *C. medullifcrus*, with showy thorny orange-scarlet fruit, and *Melochito*, bright orange.

The small fruited *Cucurbitæ* are the egg-shaped, Orange, Pear, and Lemon; those with large fruit are the club, sugar-trough, turban, and others, but except for curiosity these latter are not very desirable.

ORNAMENTAL GOURDS.

An allied genus is the *Tricosanthes*, which we also illustrate, which is very ornamental both in flower and fruit. If planted in a very warm situation it will ripen its curious fruits out-of-doors, but if one has a spare rafter in the greenhouse it can be most advantageously occupied by this plant during the summer.

The culture is only to plant the seed and train the plant. It will grow thirty foot in a season, every day give an abundance of fragrant white flowers which have long delicate fringes, and soon set snake-like fruit which is often three foot in length, and which changes when ripe to bright orange-scarlet. The best species is *T. colubrina*, but *T. anguina* is ornamental.

Nearly related to the Gourds is the well-known Balsam Apple (*Momordica*), a slender climber with delicate foliage. To grow it in perfection the seeds should be started in pots and the plants turned out, without breaking the ball of earth, into the border in early June. It should have a sunny exposure and rich, moist soil. Though the foliage is handsome and the yellow flowers very pretty, the fruit is the remarkable part of the plant; this when ripe is bright-orange color, and splits, turns back like a Turk's Cap Lily, showing the rich scarlet seeds. The species are *M. balsamina* and *charantia*, known as the Balsam Apple and Pear with reference to supposed curative properties. Either is worth growing and is very ornamental. If trained over trellises or arbors they will soon cover them and afford dense shade.

E. S. Rand.

WHY PLANTS DIE IN GARDENS.

To enumerate and describe all the various causes from which plants die would require a good-sized book. Those even which are over active in the best managed as well as in neglected gardens are not few in number, and are pointedly summed up in the following by a correspondent of *Gardening Illustrated*:

Because most plants in a state of nature grow amongst other vegetation, and their roots are in a more even temperature and more equal state of moisture than they are in pots and borders.

Because when a plant has finished growing in a garden it is generally cut down before the leaves and stems have finished their services to the plant, which starts for its next growth with less vigor in consequence.

Because the natural food of plants is the rooted product of decaying vegetation—leaf-mold, of which plants grown in ordinary garden borders receive but very scanty supplies.

Because garden borders are kept swept and garnished during winter, and the plants consequently lose the protection of their own dead leaves and stems, as well as of other dead leaves which the wind gathers about their crowns.

Because this tidying up of all decayed leaves causes all vermin, slugs, snails, wood-lice, etc., to lay their eggs and congregate about the crowns of the plants as the only place where they can find food and protection, and where they devour the shoots and buds in winter and spring as fast as they appear, and kill the plants.

Because garden borders are hoed, dug, forked over, and tidied up at all seasons, causing a continual tearing, wounding, and destruction of the growing roots of plants. Half the growing energy and life of the plants is in the tips of the young rootlets, and the loss of these is like the loss of nerve force and blood to a human being.

AQUILEGIA CŒRULEA JAMESII.

The plant described under this name in a former issue had, as we have learned since, previously been named *Aquilegia cœrulea alba*, which name should, therefore, have the right of priority; and, although this name may sound somewhat inconsistent, it is not more so than that of a "White Blackberry," one being as much a reality as the other.

The Window Garden

AND GREENHOUSE.

PLANTS FOR WINTER BLOOMING.

Most of the usual winter-blooming plants are now growing in the open garden, where, by pinching, keeping clean, and giving or receiving plenty of water, they are stocky and healthy.

People who do not have greenhouses—nothing but their windows to depend on for their winter blossoms—had better begin to lift and pot their plants early, in order to have them well rooted and established in the pots while the weather is yet warm and favorable. Such plants bloom better and sooner than poorly rooted ones. See to it that all plants are properly cleaned and free from mealy bugs, red-spider, and scale. These insects increase immensely on indoor plants. Have soil and clean pots ready, and as soon as you pot a plant, if it needs it, stake and tie it.

CARNATIONS.

Cease pinching these. If you have cut off the flower-shoots that appeared during the summer your plants should now be nice and stocky; but do not pot them till September.

BOUVARDIAS.

These blossom well out-of-doors, but at the expense of the indoor winter crop. Lift and pot them this month, or early next, and get them well rooted before cold weather sets in. They are tender, and unless carefully handled in lifting, wilt badly.

POINSETTIAS.

These delight in warm sunshine, and like to be plunged out-of-doors in the summer, but not planted out, as they lift poorly. From the time they start into growth in spring till they bloom in winter, they require to be kept warm and supplied with water. After they have finished blooming they should be kept dry. If we keep them outside in fall, during the cool nights of September or October, they will lose some of their leaves and become considerably enervated.

CACTUSES.

Do not let these stay out in cold or wet weather. As soon as the evenings get damp and chilly lift and pot the Cactuses, and place them on the piazza, or other dry, airy place.

FUCHSIAS

that have been pot grown should be kept at rest. Summer-raised cuttings and winter-blooming sorts keep growing.

GLOXINIAS.

Don't excite them to grow till after they have had four months' solid rest. If you have grown them in pots, keep them quite dry; if planted out in cold frames (I grow most of mine in frames, and get better growth and more flowers than from pot plants), keep them a little dry as soon as they show signs of decay, and afterward quite dry; then in October lift the "bulbs" and store them in flat boxes in earth or sand.

CYCLAMENS,

either planted out or in pots, will now have begun to make roots, then repot them. Don't use leaf mold in your soil; turfy loam and rotted cow manure is a good compost. Water very sparingly till they have made fresh roots and show signs of active growth.

CINERARIAS.

If you have saved your old plants, break them up and treat each sprout as a separate plant. If you have raised seedlings, pot them before they get pot-bound. Keep them as cool as possible and faintly shaded from sunshine, and give them plenty of water.

CALCEOLARIAS.

Treat seedlings as you would Cinerarias, but be more careful in keeping them cool and clean. If under glass,—frame or greenhouse,—keep them as near the glass as possible.

CHINESE PRIMROSES

love to grow in a cool, lightly shaded, cold frame. Repot them as they need it; do not let them get dry; keep them close to the glass and clean, and give them plenty of room. For yielding cut flowers the double ones are best; the blooms of the single ones drop so soon.

CALLAS.

No matter whether your plants have been set out in the garden or laid on their sides to dry up and rest during the summer, you had better repot them and get them well rooted before cold weather comes, and thus insure early blossoms. They like an open, rich, turfy soil, and when growing freely a great deal of water.

HELIOTROPES.

Old plants lifted early and potted bloom well in spring; and plants raised from cuttings in summer and kept growing in pots also afford winter flowers. Of course the plants we lift in September or October may keep up and mature the buds they are showing at the time; but then they are apt to cease growing till they have filled their pots with roots.

NASTURTIUMS (*Tropæolum Lobbii*)

should be prepared for winter work. Raise young plants from seeds or cuttings, and grow them in pots out-of-doors. From the time they are a foot high they are in bloom, and keep blooming as long as they live. They are excellent window plants for winter.

BEGONIAS

of the *fuchsioides* and *incarnata* group, if planted out, may be left undisturbed for a month yet. They lift well, and bloom copiously.

VIOLETS.

Cut off all runners, and confine your plants to nice crowns. Young plants are better than old ones. Hoe among them, and encourage them to grow.

PANSIES.

Sow seeds for spring plants. About where you grew your Pansies last spring you will be apt to get any number of seedlings; save a lot, plant them in cold frames or a sheltered place out-of-doors, as thickly as you would young Lettuces, to keep over winter. These you can set out in beds, borders, or frames early next spring.

Wm. Falconer.

CARE OF GERANIUMS.

It is altogether useless to expect that Geranium plants, which have flowered all summer in the open air, will, if taken up and potted, continue to bloom equally well during the winter season also. If Geraniums are wanted for winter flowering, they must be specially grown during summer, although it is not yet too late to prepare a few plants for that purpose. If plants have not been specially reserved, a few should be taken up immediately and potted, care being taken to select the most compact and perfectly formed specimens.

In potting, select porous or soft-baked pots, proportionate to the size of the plant, and place in the bottom of each at least an inch of broken pots, in order to insure perfect drainage. Keep the plants in the center of the pots, and firm the soil well around their roots. When the plants are potted, water thoroughly, and place in a shady situation for a week or ten days, after which time they should be exposed to the sun. Have them well supplied with water, and remove all flower-buds until it is time to bring them inside, which will be on the approach of cool weather. Give them a light, sunny situation, and an average temperature of 55°. Do not crowd the plants, and turn them occasionally, so as to develop an even, symmetrical shape.

The most suitable compost for Geraniums is a mixture of two-thirds well-rotted sods from an old pasture; one-third well-decayed manure, and a fair sprinkling of bone-dust, thoroughly mixed and pulverized before using. Water should be given as often as necessary, care being taken to give an ample supply, and when the pots become filled with roots, liquid manure water should be given twice a week. One ounce of guano, dissolved in two gallons of water, will be a proper proportion for this purpose.

When large specimens are desired the plants should be repotted as often as the pots become filled with roots, or until they have reached the desired size, when they can be treated as above advised.

There are so many good varieties in cultivation that most amateurs find it quite difficult to make a selection of the most distinct, so for their benefit I enumerate twelve double and twelve single flowering varieties, all of which may be relied upon as first-class:

Double.—*Jas. Y. Murkland, Heroine, Mrs. E. G. Hill, Mary Geering, Pocahontas, Jas. Vick, J. H. Klippart, J. P. Kirtland, Richard Brett, Bishop Wood, Asa Gray,* and *Golden Dawn.*

Single.—*Clement Boutard, Master Christine, Jean Sisley, W. C. Bryant, Mary H. Foote, New Life, Evening Star, Mrs. Windsor, Mrs. Gordon, Progress, Cygnet,* and *Aurore.*

Chas. E. Parnell.

ROSES.

"Hybrids," for blooming in pots, should be thoroughly well established in pots before fall, and not afterward excited in growth till forcing time. But "Teas" may either be grown all along in pots, or planted out in summer, and lifted and potted in early fall for winter use. But pot Roses should not be excited into blooming growth unless their pots are well filled with healthy roots.

HIBISCUS.

In this extensive genus are comprised annuals, herbaceous perennials, hardy and tender shrubs, and small trees. Among the annuals, *H. esculentus*, the Okra or Gombo of our kitchen gardens, is one of the best known. *H. Moscheutos*, the indigenous Swamp Rose-Mallow, is prominent among the herbaceous perennials, and *H. Syriacus*, the Althea of our gardens, as a hardy shrub.

H. rosa-sinensis, both the single and double forms, bear very showy flowers, and belong to our most valued greenhouse shrubs, as they are of the easiest culture, and thrive under a degree of neglect that would prove disastrous to most other plants. They bear pruning well, and large specimens, when cut back severely, will bloom profusely.

Our illustration shows a most remarkable new form, *Hibiscus schizopetalus*, which has lately been introduced to cultivation, and is described as follows: "This plant is regarded by the authorities as a variety of the well-known *H. rosa-sinensis*, but it is so remarkably distinct in general appearance that few ordinary observers would consider it so nearly related to that species. The flowers are pendulous, on slender peduncles, the petals being deeply cut, or lacinated, somewhat in the style of the Clarkias. The united filaments of the stamens closely surround the style, and the latter projects about two inches beyond the corolla, terminating in five divisions. The color of the petals is a brilliant orange red; and although the flowers, like those of other Hibiscuses, are of short duration, yet the plant is both attractive and interesting. It is a native of east tropical Africa, where it was found by the Rev. J. A. Lamb. It was exhibited at one of the Royal Horticultural Society's meetings, and was honored with a first class certificate. It requires similar culture to that of its congener."

HIBISCUS SCHIZOPETALUS.

DOUBLE HIBISCUS.

SINGLE HIBISCUS.

GREENHOUSES FOR AMATEUR USE.

With every year the number of greenhouses and conservatories increases perceptibly, so that already comparatively few country places are found without some structure for the preservation and cultivation of plants during winter. Those contemplating the construction or remodeling of plant houses should now complete their plans so as to have everything in readiness when their tender plants require shelter. The following, from the prize essay of the *Massachusetts Horticultural Society*, by Mr. William D. Philbrick, is full of excellent practical suggestions and advice, well worth the careful consideration of those interested in this subject.

The essayist supposed the wants of the average amateur to be a variety of flowering plants, some stock of bedding plants for use in the garden in summer, and conveniences for propagation. Some of his plants will be tropical, others more or less hardy; some will delight in abundant sunshine, others will flourish better in partial shade. These demands can be satisfied most efficiently and attractively by a span-roofed house. The south side will suit the flowering plants and the north side the Ferns, and the latter will also be the place for the cutting-bench. There will be no unsightly north wall, as in a "lean-to" house, and by curving the rafters an ornamental appearance can be given to the house. It should be partitioned into three or, better, four compartments. Two will face the sun; the one nearest the fire will be for tropical and the other for hardier plants; the former should have a temperature of 60° at night, while the hardy plants will do better with 40° to 45°. Both will need abundant air, and therefore must be provided with ample ventilators. The compartments on the north side will be for plants which flourish best in diffused light.

The house may be built twenty feet wide, and as long as the needs of the owner require. The south side should have upright sashes three feet from the ground, for ventilation. From the plate to which these sashes are hung spring the rafters, rising to a ridge nine feet high and eleven and a half feet from the front of the house, giving a length to the rafters of about thirteen and a half feet. The northern compartment will be eight feet wide, with rafters ten feet long, springing from a sill laid on a concrete wall three feet high. This plan gives a steeper pitch to the north sides so as to prevent snow from lodging. The glass should be double thick, ten inches by twelve, bedded in putty. Ventilating sashes three feet square will be needed every six feet along the ridge on both sides, and a row of posts midway of the rafters.

Lawn and Landscape.

FORMATION AND MANAGEMENT OF LAWNS.

A smooth, velvety lawn should, at this season, form the most attractive and cheerful feature of every country home; but unfortunately there are a great many country residents to be found who are far from priding themselves about the beauty of their lawns. Immense sums of money are annually spent to but little purpose, simply because the owners expect impossibilities and do not give sufficient time for preparation.

"I shall have a good lawn next year, if it takes all summer," said a friend, the other day, who had made several ineffectual attempts in this direction. "You will be more successful if you take all *this* summer and fall," was our reply, and as there are, no doubt, many others among our readers in a similar situation, we give below some of the very appropriate remarks of our correspondent, Mr. Chas. E. Parnell, before the New York Horticultural Society:

In forming a new lawn, the work should not be too hastily and imperfectly done, as this will prove to be a serious mistake, and one that cannot be rectified afterward. In the first place we must see that our grounds have the desired grade, and that they are thoroughly and properly drained, and in the condition necessary to produce a good crop of vegetables; if so, they will produce good lawns.

The preparation of the ground is best done in the fall, so that it can become well settled by the time we are ready to sow the seed in the spring. Prepare the ground by giving a heavy dressing of well decomposed stable manure, and work it in well by plowing thoroughly. A subsoil plow should follow the common plow. Then harrow thoroughly, and finish by leveling the whole as neatly as possible. As soon as the weather becomes settled in the spring, apply to each acre from five to six hundred pounds of bone-dust; harrow it in thoroughly, and be careful to have a good surface soil of from eight to ten inches in depth throughout the entire ground, and finish by having the surface as finely pulverized as possible, removing all sticks, stones, etc.

The ground being properly prepared, the next consideration is the sowing of the seed. This should be done as early in the spring as practicable, choosing a calm day. The sowing should be carefully done, in order to distribute the seeds equally over the entire surface, and not in spots, as this looks bad and is not creditable to the sower. Sow thickly at the rate of from four to five bushels to the acre, and rake the seeds slightly in. Give, if possible, a sprinkling of soot or wood ashes, in order to render the seed distasteful to birds, and finish by rolling thoroughly.

What varieties of grass to sow in order to obtain a satisfactory result is really a serious question. I have no hesitation in saying: Sow June or Blue grass only.

In advocating the sowing of June grass, pure and simple, I am aware that I am treading on dangerous ground, for I know that many will differ with me. I admit that the June grass will not form a lawn quite as soon as the various mixtures known as lawn grass, but a lawn of June grass, when obtained, will be found well worth waiting for.

June grass will thrive in almost any soil and situation, with full exposure to the sun or in partial shades; and in seasons of drought, when everything is suffering from want of moisture, the June grass will retain its verdure to the last. However, some will insist upon having a mixture; and, it is said, a very good one can be made by adding two pounds of sweet vernal grass and one pound of white Clover to four bushels of June grass.

About the middle of June our lawn will be looking pretty green; but among the young grass a great many weeds will be noticed, and the temptation to remove them will be very strong; but don't do it, for, depend upon it, any attempt at their removal at this time will do more hurt than good. About the first of July our lawn will be ready to be mowed; but we must not cut too low, and the clippings should be permitted to remain, in order to protect the young and tender roots. After mowing, roll thoroughly; and after this, mow weekly, if necessary, until the grass ceases to grow. In the autumn the annual weeds will have disappeared, and the perennial ones can be cut out with a stout knife.

It often happens that it is very inconvenient to prepare new lawns, and in such cases we must try to restore the old. In order to do this properly, we must commence in the autumn. First fill up all inequalities by carefully lifting the sod, filling in and replacing it. At the same time, remove all perennial weeds, and then give a good dressing of stable manure. As soon as the weather becomes settled in the spring, the manure should be removed. Then rake thoroughly, using a good iron rake, and be particular to remove all dead grass, moss, etc. When this is done, give a good dressing of bone-dust and sow grass-seed as for a new lawn. Roll well, and as soon as the grass is long enough, mow weekly throughout the season, excepting in seasons of severe drought. It seems almost superfluous to remark that mowing should always be done with a lawn-mower in preference to the scythe. The work is thus more quickly accomplished, to say nothing of its neater and more attractive appearance when finished.

Moles are sometimes very annoying. The only remedy for these pests consists in the proper use of a good trap.

Sodding, at the best, is slow and expensive work, and, unless for places of very small extent, I would not advise the use of sods. In forming new lawns, however, it is sometimes absolutely necessary to lay sod along the margins of walks, and also on steep banks, as heavy rains might wash away the soil before the seed has had time to vegetate. Any clear sod can be used for this purpose, care being taken to firm it well with the back of the spade.

In seasons of severe drouth some resort to watering; but unless one has an abundant supply of water and the necessary facilities for doing the work thoroughly, it is better not to make the attempt, for anything short of thorough watering will do more hurt than good. If the ground is properly prepared, the mowing properly attended to, and the clippings allowed to remain, little or no injury from drought need be apprehended.

PLANTING FORESTS.

A writer in the *American Journal of Forestry*, in pointing out the requisites for success in stocking artificial forests, lays down two very important essentials,—namely, thorough preparation of the soil and the selection of healthy and vigorous plants. Prairie and other land is to be very thoroughly plowed, and harrowed and reharrowed till reduced to a complete state of pulverization. It will do no harm to plant the ground thus prepared for one season with Corn or Potatoes, in order to continue and perfect its condition.

The young trees before setting out should be well examined, the writer asserting, no doubt with truth, that a very large percentage of all the forest trees planted on the north-western prairies are practically dead before they are set out. This is especially true of Evergreens, and the trouble is aggravated by the fact that many planters do not know a dead Evergreen from a live one, and set out much stuff which is only fit for the brush-heap.

This remark will apply to other than forest planting, judging from the large number of dead Evergreen trees all through the country within a few months after transplanting. There is a great deficiency in the proper and intelligent care of young trees, from the moment they are lifted from the nursery row till well and properly fixed in a fine mellow soil where they are to remain; and the remedy appears to be line upon line until owners and their employés understand that trees are to be treated with a care equal to that given to young animals, and that they cannot be thrown about and exposed to the air at the roots with impunity.

No planter should value himself on his skill until he can take up and set out a thousand or even ten thousand young trees without a single lost one, for if all have a good and equal chance none will die.

BEAUTIFUL MAPLES.

Two new varieties of the Norway Maple have recently been introduced from Germany, and promise to become important acquisitions. Both have the vigorous, elegant, clean growth for which the type is so justly esteemed. *Mr. W. C. Barry* describes them as follows:

Acer Schwedlerii has bronzed purple leaves, which appear to the best advantage during the spring-time and early summer. As the season advances, the leaves change to a duller shade, which is less attractive. But in this respect it differs little from purple-leaved trees generally, as they all lose their richest tints during the hot summer days.

A. Reitenbachi is of quite recent introduction, and while its foliage lacks the richness and brilliancy of color for which *A. Schwedlerii* is noted, its purple shade is more enduring and lasts till late in the season.

A. Lorbergii is also quite new, but it does not differ enough from the old variety, *A. dissectum*, to be of much value. The latter is a rare and handsome variety, and has always been scarce, owing to the difficulty which nurserymen experienced in obtaining salable specimens, its growth being always more or less crooked. *Lorbergii* seems to be a better grower, and as it can be propagated more successfully it may displace *dissectum*.

Foreign Gardening.

CINNAMON CULTURE IN CEYLON.

About 1770 De Coke conceived the happy idea, in opposition to the universal prejudice in favor of wild-growing Cinnamon, of attempting the cultivation of the tree in Ceylon. This project was carried out under Governors Falck and Vander Graff with extraordinary success, so that the Dutch were able, independently of the kingdom of Kandy, to furnish about four hundred thousand pounds of Cinnamon annually, thereby supplying the entire European demand. In fact, they completely ruled the trade, and would even burn the Cinnamon in Holland lest its unusual abundance should reduce the price.

So determined were the Dutch to retain the monopoly in the produce of Cinnamon that the plants were limited to a certain number, and all above that number destroyed, besides which large quantities of Cinnamon, after having been prepared for market, were frequently thrown into the sea or burnt. It is recorded that on the 10th of June, 1760, an enormous quantity of Cinnamon was wantonly destroyed near the Admiralty at Amsterdam. It was valued at eight millions of livres, and an equal quantity was burnt on the ensuing day. The air was perfumed with this incense; the essential oils, freed from their confinement, distilled over, mixing in one spicy stream, which flowed at the feet of the spectators; but no person was suffered to collect any of this, nor on pain of heavy punishment to rescue the smallest quantity of the spice from the wasting element.

When Ceylon came into the hands of the English in 1796, the Cinnamon trade became a monopoly of the English East India Company, and it was not till 1833 that this monopoly was finally abolished, and the Cinnamon trade passed into the hands of merchants and private cultivators.

A very heavy duty, to the extent of a third or half its value, was imposed upon Cinnamon up to within so recent a date as 1853. At the present time by far the largest proportion, as well as the finest quality, is obtained from Ceylon, where extensive plantations exist.

The Cinnamon-tree, which is very variable in form and size, is known to botanists as *Cinnamomum zeylanicum*. It is very generally distributed in the Ceylon forests up to an elevation of from 3000 to 7000 feet. The best quality bark is obtained from a particular variety, or cultivated form, bearing large, irregular leaves. The barks, however, of all the forms are very similar in appearance, and have the same characteristic odor, so that it is sometimes impossible to distinguish the best trees from appearance alone. It is not uncommon, indeed, for the Cinnamon peelers, when collecting bark from uncultivated plants, to taste a small portion before commencing operations, and to pass over some trees as unfit for their purpose. On the south-west coast of Ceylon, on a strip of country some twelve or fifteen miles broad, between Negumbo, Colombo, and Matura, the best quality of Cinnamon is found up to an elevation of 1500 feet.

Sir Emerson Tennent states that the five principal gardens in the above district were each from fifteen to twenty miles in circumference. Owing, however, to the enormous extent of Coffee cultivation, up to within the last few years, many of the Cinnamon gardens have given place to Coffee, which has since been so seriously devastated by the *Hemileia vastatrix*, that Coffee-planting has in many plantations been itself abandoned.

The management of the Cinnamon plantation has been described as similar to that of the Oak coppice in England. The plants are pruned to prevent their becoming trees, so that several shoots spring up, four or five of which are allowed to grow for a year or two. At this period the grayish-green bark begins to change color, and to assume a brownish tint. As the shoots arrive at the proper state of maturity, at which time they are usually from six to ten feet high, and from half an inch to two inches thick, they are cut down with a long-handled hatchet-shaped knife, known as a *catty*. The leaves are then stripped off, and the bark slightly trimmed of irregularities, the trimmings being sold as Cinnamon chips. It is next cut through at distances of about a foot, and cut down also longitudinally; it is then very easily removed by inserting a small sickle-shaped knife, called a *mama*, between the bark and the wood.

After removal the pieces of bark are carefully put one into another and tied together in bundles. In this state they are left for twenty-four hours or longer, a kind of fermentation taking place which helps the removal of the outer bark. To effect this, each piece of the bark is separately placed on a stick of wood convex on one side, and by carefully scraping with a knife, the outer and middle layers are removed. At the expiration of a few hours the smaller quills are placed within the larger, and the bark curling round forms a sort of solid stick, generally about forty inches long. These sticks are kept for a day in the shade to dry, and then placed on wicker trays for final drying in the sun, and when thoroughly dried are made into bundles, each weighing about thirty pounds.

Notwithstanding that the Cinnamon plant has been introduced into India, Java, China, Senegal, Brazil, West Indies, and other parts of the world, the bark imported from these places is deficient in aromatic qualities, and Ceylon Cinnamon still holds its own as the very best quality brought into the market.—*London Graphic.*

SAND-BINDING PLANTS IN INDIA.

In his report to the Government Revenue Department, Dr. Bidie states that the plants formerly employed near Madras were chiefly the Goat's-foot Creeper, *Ipomœa pes-capræ*, and the spiny, pink-like grass, *Spinifex squarrosus*. Lately, however, extensive plantations of *Casnarina muricata* have been made with decided success. This tree, Dr. Bidie says, exists now for many miles along the coast north and south of Madras, and has greatly improved the appearance of what was before a sun-beaten, sandy waste. There can be no doubt, also, that the plantations have rendered the fields behind them more valuable for affording shelter, and in some cases have permitted land to be brought under cultivation which would otherwise have remained in a waste state.

The Casnarina is a very hardy plant near the sea, and will grow down to high-water mark even amongst loose sand. The secret of its flourishing in such situations is due to the fact that the subsoil water is always near the surface, and that the sand, although apparently barren, is generally largely mixed with decayed organic matter. When the trees in a Casnarina plantation are left unpruned, they throw out decumbent horizontal branches, which develop roots, and thus fix the sand. If the trees are cut, these rooting branches, when left intact, throw up shoots, and thus the forest is naturally renewed. In the shade of an established Casnarina plantation the ground is littered with the minute twigs shed by the trees, and this top-dressing, if left undisturbed, shortly decays and fructifies the soil. The importance of the Casnarina in the reclamation of waste sandy tracts on the Indian coast can hardly be overestimated.

A GREEK OLIVE-OIL FACTORY.

From the churches our host took us to inspect an olive-oil factory, of which there are several in Pyrghi, so that the stream which waters the village is brown with olive-juice, like water tinged by peat in an Irish bog. Here they use no machinery or modern appliances in pressing the oil,—merely the old primitive wooden press. Women, or sometimes mules, walk round and round, revolving a wheel which crushes the Olives; in this condition they put them into sacks, and then into that "black-faced heifer which devours oak-wood," as the Chiotes, in their figurative way, are wont to describe their ovens. The sacks are then placed one over the other in the press, and two men turn a post which pulls a rope, which drags a stick, which tightens the press, and the oil oozes into the receptacle prepared for it, with water inside. The oil and water, of course, do not amalgamate, the dregs sink to the bottom, and the pure oil flows into jars prepared for it.

It is impossible to realize the affection people have for Olives in a purely olive-growing country. "An Olive with a kernel gives a boot to a man," is a true adage with them. It is the principal fattening and sustaining food in a country where hardly any meat is eaten. It takes the place of the Potato in Ireland, and on the Olive crop depends the welfare of many. An olive-yard is presented to the church by way of glebe, and the peasants collect on a stated day to gather these sacred Olives, which they buy from the church, and always at the highest market value.—*Macmillan's Magazine.*

GARDENERS IN FRANCE.

A correspondent of *Der Gartenfreund* gives a sketch of the mode of life of a journeyman gardener in France, from personal experience. According to the writer's experience, the position of an under-gardener in a private establishment in France is a most unenviable one. In the first place, it is compulsory to wear the blue linen blouse, small clothes, apron, and cap, and to introduce one's feet into sabots, which are far more ungainly and incomparably more noisy than boots. On the other hand, one has the benefit of enjoying more fresh air in France than elsewhere, for the hours are from four, or, at the latest, five in the morning until late in the evening. Further, there is no distinction between a professional gardener and a common laborer.

Horticultural Societies.

THE INTERNATIONAL EXHIBITION OF FRUITS AND PLANTS.

The Horticultural Department of the World's Exposition at New Orleans, to be held next winter, has now been fully organized and placed under the direction of Mr. Parker Earl of Illinois, Hon. P. J. Berckmans of Georgia, and Charles W. Garfield of Michigan. A more efficient committee could not be selected in our entire domain, and the consent of these gentlemen to serve in this capacity is in itself a guarantee of success.

The managers expect to secure an International Exhibition of Fruits and Plants which will be of the greatest value to all of the vast interests connected with horticulture. To provide proper facilities for so important an exhibition, they have erected a large and beautiful Horticultural Building or Conservatory, the walls and a large portion of the roof of which are covered with glass, and specially adapted to the exhibition of both fruits and plants. This building is six hundred feet in length, with an average width of one hundred and fourteen feet. It will furnish table room for twenty-five thousand plates of fruit, and forty thousand feet of space for the exhibition of plants. Apartments with suitable heating arrangements for the care of greenhouse and stove plants will be provided.

Extensive space has also been assigned to this department in the beautiful grounds adjacent to the Horticultural Building, for the planting of large exhibits of trees and plants. The Government of Mexico will fill five acres or more of this space; the States of Central America, the State of Florida, and, it is hoped, many other States and nations, will here occupy spacious grounds in the exhibition of their sylvan and floral wealth.

The managers tender their assurance that this exhibition will be managed throughout in the most liberal spirit, and with the earnest desire of securing an unprecedented opportunity for the exhibition, the study, and the comparison of a wider range and a greater wealth of agricultural products than have been hitherto gathered together.

All communications and inquiries should be addressed to the Chief of this Department, Mr. Parker Earl, Cobden, Ills. The exhibition will open December 1, 1884, and continue not exceeding six months.

SOCIETY OF AMERICAN FLORISTS.

During the recent session of the Association of Nurserymen, held at Chicago, at which a large number of leading florists were present, a society with the above title was organized.

It was stated that the number of florists engaged in the legitimate business of raising flowers was nearly ten thousand. That dealers and those engaged as decorative florists, and those connected with the branches of the profession, and whose interests also are to be considered by the society, are nearly five thousand. The spontaneous response to the question as to whether a society of the kind was desirable, left no doubt as to the future of the society. Its objects were briefly stated as:

First. To encourage horticulture in all forms, by advising and comparing the growth of the business in each district.

Second. To award certificates of merit to all new and deserving flowers.

Third. To have each year an exhibition at the time of the annual meeting in one of the large cities.

Among other points suggested was a Protective Fund for the insurance against loss by hail and fire, and the security of the trade generally.

The annual dues for membership are $2.00, and the first regular meeting will be held at Cincinnati in August, 1884.

The officers elected are John Thorpe, Queens, N. Y., President; M. A. Hunt, Wright's Grove, Chicago, Ills., Treasurer; E. G. Hill, Richmond, Ind., Secretary.

With the rapidly increasing importance of floriculture throughout the land, such a society seems to be capable of doing an immense amount of good not only in the interests of its members but in the promotion and development of refined horticultural taste generally; and with so able a board of officers as the gentlemen elected to lead it, the society can hardly fail to become a grand success.

AMERICAN ASSOCIATION OF NURSERYMEN.

Mr. Peter Henderson's paper on Advertising, read before this society, and from which we quote the following, deserves the careful attention of advertisers, as the art of advertising is understood by comparatively few, while every one who has something to sell is anxious to learn it.

"Long ago," said Mr. Henderson, "I came to the conclusion that unless the advertiser has something to sell of which he has the exclusive control, and something that a large portion of the community wants, the amount invested will never be returned to him in profits the year it is invested. In other words, if $10,000 is invested in advertising Trees, Plants, or Seeds, the profits resulting in sales from such advertising is not likely to be $10,000, probably not $5000, the first season. But there is no doubt that advertising, judiciously and persistently done, will pay, always provided that the goods offered for sale are sold at a reasonable price, and are true to representation. The public, apparently, are easily deceived, but they will not long submit to humbug. The enterprising peddler of the bulbs of "Blue Dahlias" and "Red Tuberoses," or of the Apple-trees that produce Apples as big as Pumpkins, knows enough never to try the same game twice in the same district, and is forced to find his gullible flock continually in new pastures. But although it is my belief that few advertisers ever get the money invested in advertising back the first season, yet there is no question but that persistent advertising, judiciously done, over a period of ten, or perhaps even five years, will never fail to pay, always provided that the business is a legitimate one, that the goods sold are as good and cheap as are offered by men who do not advertise, for the reason that when the article advertised attracts a customer, if he finds that the goods he received are satisfactory, the chances are more than equal that you will hold him for a patron just as long as he wants the goods that you have to sell.

"The ways of advertising are nearly as varied as the articles advertised, and the great points to discover—what are the best mediums and the best means? It is not always the largest subscription list that brings about the best results. All depends upon whether the paper circulates among the class of people who want the goods you have to offer. The different branches of our profession often throw their money away for want of knowledge in this particular. If you have expensive articles of luxury to sell, a paper of one hundred thousand circulation among the working classes will not give as good results as one having a circulation of five thousand among the more well-to-do class, while a cheap article of utility might do better among the one than the other.

"Although in advertising, as in nearly everything else, all of us imitate more or less the methods of our predecessors, still, the man who has fertility enough to use well-judged original methods, other things being equal, will certainly get ahead of the man who is simply a slavish imitator. This is not only true in advertising, but it is true in nearly all the methods of business operations. The beaten tracks are too plain to be seen, and consequently competition comes in, and the profits are reduced. But when men are gifted with originality or fertility of ideas, they are enabled to take short cuts that lessen labor and attain the same results. Following in the tracks of another requires neither energy nor enterprise; and when a man indolently follows in the wake of another, whether in advertising or in anything else, rest assured that it will only be by some rare chance that he ever gets even abreast in the race."

MASSACHUSETTS HORTICULTURAL SOCIETY.

The July exhibition was good in all departments, and the large number of visitors was especially noticeable. Mrs. Margaret Parker exhibited flowers of *Nelumbium speciosum*, the Sacred Lotus of India, and *Limnocharis Humboldtii*, or Water Poppy. Mrs. P. D. Richards presented another collection of native plants, making, in all, one hundred species exhibited by her the present season. John C. Hovey showed a new double Amaryllis from Japan, and *Convolvulus leptophyllus* from New Mexico. Joseph Tailby exhibited a finely flowered Orchid (*Brassia verrucosa*), and Hon. Marshall P. Wilder the new Rose raised and named for him by the late lamented Henry P. Ellwanger. It is of fine form, color and, fragrance and by its late blooming gives indications of becoming a continuous bloomer. Mrs. E. Wood contributed a handsomely arranged vase of flowers, and E. H. Hitchings a plant of *Cicer aristinum*. The bouquets of Sweet Peas from J. H. Woodford were much admired.

All the fruits of the season—Raspberries, Currants, Blackberries, Gooseberries, and early Pears—were represented by good specimens; of Gooseberries, very large specimens of Speedwell were shown by Warren Fenno, and Whitesmith by Mrs. E. M. Gill.

In the vegetable department the most noticeable exhibit was by B. K. Bliss & Sons, of New York, of vines of Bliss' Abundance and Bliss' Everbearing Peas. One of the former bore seventy-one pods, and one of the latter seventy-five, and another (of the latter kind), which was not counted, was thought to have a hundred pods. The Society's Silver Medal was awarded for these Peas.—*From the Society's Report.*

Household Pets.

HOW TO KEEP GOLD FISH IN HEALTH.

In reply to this inquiry we quote from *Pease's Feathered World* the following:

1. Cover the bottom of the aquarium with clean, coarse sand to the depth of about one inch and a half. Avoid fine sand and soil.

2. Insert the plants with a stone over each bunch, to prevent their disturbance by the fish.

3. In a few days, when the plants show that they are thriving, by the production of oxygen bubbles, put in the fish, not before.

4. Beware of the common fault of putting in too many fish, and be careful as to the admission of sticklebacks, injurious insects, etc. Some beetles are very destructive to fish.

5. Never give the fish bread. In good condition they require no feeding; but a pinch of dry-fish food, broken into minute pieces with the finger and thumb, is good for them. They are very fond of it, and will soon take it from the fingers when called. If forgotten, no harm will follow.

6. Do not let the aquarium remain in a strong sunshine or glare of light; a position between two windows is the best. If in a window, the light should be regulated with the blind or frosted glass.

7. In addition to the rooted plants, it is well to have a few of the round-leaved water plants floating on top.

The water in my aquarium has not been changed for twelve months; I simply add a little from time to time to make up diminution by evaporation. If the fish remain near the surface, gasping for air, it is a proof either that the aquarium is overstocked with fish, or that the plants are not growing healthily, some of the foregoing rules being broken. It is well to have a few water snails in the aquarium. A sponge fastened to a stick will suffice to cleanse the interior sides, leaving the side next to the light uncleansed whereby the light is qualified. Once fairly started, there is no further trouble whatever.

HOW BIRDS LEARN TO SING.

A Wren built her nest in a box on a New Jersey farm. The occupants of the farm-house saw the mother teaching her young to sing. She sat in front of them and sang her whole song very distinctly. One of the young attempted to imitate her. After proceeding through a few notes, its voice broke and it lost the tune. The mother recommenced where the young one had failed, and went very distinctly through with the remainder.

The young bird made a second attempt, commencing where it had ceased before, and continuing the song as long as it was able, and when the notes were again lost, the mother began again where it had stopped and completed it. Then the young one resumed the tune and finished it.

This done, the mother sang over the whole series of notes the second time with great precision, and again the young one attempted to follow her. The wren pursued the same course with this one as with the first, and so with the third and fourth. This was repeated day after day, and several times a day, until each of the birds became a perfect songster.—*Holden's Bird Magazine.*

Miscellaneous.

THE VALUE OF LAUGHTER.

Laugh merrily while life is here,
For death cuts short all laughter;
Laugh all thy life, and let the tear
Come, if it will, hereafter.

More laughter in the world would bring
The "touch of nature" nearer;
Good-will will flourish 'neath its wing,
And man to man be dearer.

No time like now; the future lies
A darkened road before us.
So let thy laughs outweigh thy sighs,
And merry be thy chorus.

We know that man is prone to tears,
And born an heir to sorrow;
But what's the use of doubts and fears
Of what may be the morrow?

The evil of to-day, we read,
Sufficient is for keeping;
So laugh away, let naught impede,
And give a truce to weeping.

MARKET ITEMS.

THE BUSINESS OUTLOOK.

Although several small houses have failed within the past few days, a better feeling is gaining in business circles.

Fruit and grain crops are both very promising, and the outlook for the future is indeed encouraging. The real injury done by the Wall street failures is very slight in legitimate business circles.

The prospect for a good fall trade was never better, and the opinion seems to be general among jobbers that this will be the case. A good will is half the battle; and, if manufacturers and jobbers will it, their hopes will be realized. The farmers always do their duty.

INCUBATION *vs.* THE HEN.

There is a great demand for early chickens, and in large cities they find a ready market at from fifty to sixty cents per pound; but to get these high prices, they must be hatched in February, March, and April, and as hens are not sittingly inclined that early, they must be hatched in incubators.

"I have two incubators, holding 480 eggs," says a correspondent. "They are a complete success; being cheap, and so simple that any one can handle them.

"I have 212 hens, and from them and the incubators I have sold, since March first, $1428 worth of chickens and eggs. I run my incubators the year round, and think there is no more profitable business."

SOUND *vs.* UNSOUND FRUIT.

Now that the pickling and preserving season is approaching, ladies should watch the market, and, of all things, remember that to "do up" unsound fruit and vegetables is a foolish waste of time, money, and a damage to health, especially in cholera year. More than usual care should be exercised in the selection of fruit, especially for children.

At all times, during the season for it, fruit is cheap, and it is poor economy which, for a few cents less, purchases that which, when eaten, endangers health and life.

BANANAS.

The Banana has come to be almost a necessity in thousands of families to whom it was unknown a few years ago. They are fried and served as an *entrée;* pies are made of them, with a delicate upper and under crust, with plenty of sugar and a suggestion of spice, but when sliced thin and mixed with chopped Pineapple, or with chopped Oranges, they are simply delicious. At breakfast they are served by removing the skin, cutting the Bananas in two pieces crosswise, and piling them on a pretty china or fancy plate.—*N. Y. Market Journal.*

INTELLIGENCE OF THE ORIOLE.

On the western side of Central Park, very near One Hundred and Third street and Eighth Avenue, stands a row of Elm trees, difficult to approach on account of a heavy growth of Syringa bushes around them. On a branch of one of the trees, about sixteen feet from the ground, a pair of Baltimore Orioles set to building a nest a few weeks ago. They chose the extreme end of the bough, with evident intention of making it a hazardous experiment for any bird-nester to attempt to molest them. But, in their excess of caution, they appeared not to observe what the few persons whose eyes were keen enough to see the first labors of the little architects saw—that the branch was much too slender to support so large a nest as an Oriole builds.

When the nest was about two-thirds finished, the birds saw their mistake. The branch had bent so low that it was getting perilously near the grass. Work was at once stopped, and the builders sat close together for a long time, and seemed to be discussing the situation. Finally, they flew side by side to a bough about fifteen inches over the one on which their nest was, and, leaning over, inspected the distance. They seemed to be satisfied, and, though it was growing rapidly dusk, the birds flew away in opposite directions. In the morning, it was found that they had firmly secured their habitation, and prevented the branch from bending lower, by passing a piece of white string, which they had found somewhere in the park, over the upper bough, and fastening both ends of it securely to the edges of the nest. The building then went rapidly on, and the Orioles are now engaged in hatching their eggs. Very few persons have seen the nest, and there is a fair prospect that their skill and ingenuity will be soon rewarded by a brood of young Orioles.

The Baltimore Oriole is a very intelligent bird, but a New-York ornithologist, who saw the nest, said he had never seen an achievement quite equal to this one before. He says the art of knitting fibers or strings together is well known to many birds. The Weaver-bird of India builds its nest out of a large, strong leaf, which it stitches together at the edges, making a compact and closely-adhering funnel.—*New-York Sun.*

A GIGANTIC PLANE-TREE.

Professor Virchow recently exhibited at a meeting of the Berlin Medical Society, photographs of a gigantic Plane-tree, growing in the Island of Cos, under the shade of which Hippocrates is said to have held medical consultations. The tree now stands in the market-place of Cos, on the east side of the island. The branches, which spread over nearly the whole of the market-place, are supported by marble pillars.

WHITEWASHING CELLARS.

One good agency for keeping the air of the cellar sweet and wholesome, says *Dr. R. C. Kedzie*, in the *N. Y. Tribune*, is whitewash made of good white lime and water only. The addition of glue or size, or anything of this class, is only a damage, by furnishing organic matter to speedily putrify. The use of lime in whitewash is not simply to give a white color, but it greatly promotes the complete oxidation of effluvia in the cellar air. Any vapors that contain combined nitrogen in the unoxidized form contribute powerfully to the development of disease germs.

Lime powerfully promotes oxidation, especially in damp situations. I have seen cellar walls where the mortar was covered with a white efflorescence of nitrate of lime. So powerfully does lime accelerate the oxidation of nitrogenous matter for the formation of nitrates that it causes the "lime rot" in the foul alleys of cities. The nitrate of lime is very soluble, and the rain soon washes away the lime of the mortar, leaving only the sand to hold the bricks together. The same tendency to oxidation may keep the cellar free from foul odors by oxidizing the volatile nitrogen compounds into innocent nitrate of lime.

CHEWING THE CUD.

Every child living in the country has stood and watched this curious operation, and wondered what the lump was which he saw come up in the cow's throat, and then go down again after she had chewed it for a certain length of time. And perhaps he may have seen the anxiety and turmoil produced on a farm by the report that some one of the cows had "lost her cud," and as the result of this excitement he may have seen the absurd attempt to "make a new cud," in the hope that the cow would by such means be restored to good condition. There is in the minds of a large proportion of readers so little correct understanding of the true nature of "chewing the cud" that a few words concerning it may not be amiss.

A very large tribe of animals, of which sheep and cows are only familiar examples, are called in works of natural history *Ruminantia*, because they all *ruminate*, they chew the cud. They do so because their peculiar organs of digestion require it; they can get their nourishment in no other way. They have, it is said in the books, four stomachs, but the statement is not strictly correct, for the entire digestion is done in a single one, that which is called the fourth, the other three being only places for preparatory work. Their food is swallowed without being chewed; the chewing is to come later. When this unchewed food is swallowed it passes directly into the first stomach, to use the common term; but the drink which the animal takes goes straight past the entrance of the first into the second. These two serve only to *soak* and soften the coarse food. When the first has done what it can, the food passes out of it into the second, and then the cow or sheep is ready to "chew the cud."

The second stomach, while busily at work in soaking the food, keeps it in motion, and gradually rolls it up into masses, so that in the small upper part there is formed an oblong solid lump of the size that we recognize as the "cud." This the animal throws up into the mouth, and chews with evidently as much satisfaction as the same act of mastication gives us when we put the most delicate morsels between our teeth. When it is sufficiently chewed, the mass is swallowed and its place taken by another which had been rolled up in the meantime.

But the "cud" thus masticated does not return to the second stomach from which it had come. It passes smoothly into the third, a place for additional lubrication, and then into the fourth, where the true digestion begins and ends.

This is, in brief, the whole story, and we see how naturally the chewing comes in; it is the same as in our own case, only that it is at a different stage of the food's progress, and we see also what "losing the cud" really is. The cow or sheep is suffering from indigestion; the "second stomach" has failed to roll up the little masses suitable for chewing, and there is nothing which the poor beast can bring up. Of course, therefore, the one thing required is to *restore the tone and power of the stomach*; not to burden it with an "artificial cud," which would only increase the difficulty instead of relieving it. —*Scientific American.*

USES OF THE COCOA-NUT.

A Chinese proverb says that there are as many useful properties in the Cocoa-nut Palm as there are days in the year; and a Polynesian saying tells us that the man who plants a Cocoa-nut plants meat and drink, hearth and home, vessels and clothing, for himself and his children after him.

The solid part of the nut, says Grant Allen, supplies food almost alone to thousands of people daily, and the milk serves them for a drink, thus acting as an efficient filter to the water absorbed by the roots in the most polluted or malarious regions. If you tap the flower-stalk you get a sweet juice, which can be boiled down into the peculiar sugar called (in the charming dialect of commerce) jaggery; or it can be fermented into a very nasty spirit known as palm-wine, toddy, or arrack; or it can be mixed with bitter herbs and roots to make that delectable compound "native beer." If you squeeze the dry nut you get Cocoa-nut oil, which is as good as lard for frying when fresh, and is "an excellent substitute for butter at breakfast," on tropical tables. Under the mysterious name of copra (which most of us have seen with awe described in the market reports as "firm" or "weak," "receding" or "steady") it forms the main or only export of many Oceanic islands. The thicker portion is called stearine, and used for making sundry candles with fanciful names, while the clear oil is employed for burning in ordinary lamps. In the process of purification it yields glycerine; and it enters largely into the manufacture of most better-class soaps.

The fiber that surrounds the nut makes up the other mysterious article of commerce known as coir, which is twisted into stout ropes, or woven into Cocoa-nut matting and ordinary door-mats. Brushes and brooms are also made of it, and it is used, not always in the most honest fashion, in place of real horse-hair, in stuffing cushions.

The shell, cut in half, supplies good cups, and is artistically carved by the Polynesians, Japanese, Hindoos, and other benighted heathens, who have not yet learned the true methods of civilized machine-made shoddy manufacture.

The leaves serve as excellent thatch; on the flat blades, prepared like papyrus, the most famous Buddhist manuscripts are written; the long mid-ribs or branches (strictly speaking, the leaf-stalks) answer admirably for rafters, posts, or fencing; the fibrous sheath at the base is a remarkable natural imitation of cloth, employed for strainers, wrappers, and native hats; while the trunk, or stem, passes in carpentry under the name of porcupine-wood, and produces beautiful effects as a wonderfully colored cabinet-makers' material. These are only a few selected instances out of the innumerable uses of the Cocoa-nut Palm.

GUANO TESTS.

Probably there is no better method of determining the purity of guano, says the *Scientific American*, than the combustion test, which is as follows:

Pour half an ounce of the guano into an iron ladle, such as is used in casting bullets, and place it upon red-hot coals until nothing but a white or grayish ash is left, which must be weighed after cooling. The best sorts of Peruvian guano do not yield more than thirty or thirty-three per cent. of ash, while inferior varieties, such as Patagonian, Chili, and African guano, leave a residue of sixty or even eighty per cent. Genuine guano leaves a white or gray ash; and a red or yellow ash indicates the adulteration with earthy matter or sand, etc.

This test is based upon the fact that the most important ingredients, viz., the nitrogenous compounds, become volatilized, and escape when subjected to a sufficient amount of heat. The difference of odor of the vapors evolved in the process, according as we are working with first or third class guano, must also be noticed. The vapors from the better kinds have a pungent smell like spirits of hartshorn, with a peculiar piquancy somewhat resembling that of rich, old decayed cheese, while those arising from inferior varieties smell like singed horn shavings.

TAMARINDS.

There are but few people to whom the flavor of preserved Tamarinds is not agreeable; but do those who frequently use Tamarinds know how they are prepared?

According to the *Gardener's Chronicle*, they come into commerce both from the East and West Indies; the latter are simply the fruits, or rather pods, from which the shell or epicarp has been removed, and the pulp, together with the strong, fibrous frame-work upon which it is built, and the seeds are placed in alternate layers with powdered sugar in a cask or jar, over which boiling syrup is afterward poured.

In the East Indies it seems they are prepared by first removing the epicarp and seeds by hand, after which the pulpy portion is usually mixed with about ten per cent. of salt, and trodden into a mass with the naked feet. Of these Tamarinds several qualities are known in the market, the best being free of fiber and husk, and the worst containing both, together with the hard, stone-like seeds, which are commonly eaten in the East Indies after being roasted and soaked.

OUR BOOK TABLE.

The Flax Plant, by *Frank I. Shurick, Fort Wayne, Ind.*—A pamphlet of twenty-six pages, giving the history, value, and modes of cultivation for seed and fiber.

Kansas State Board of Agriculture.—Monthly Report, containing a summary of reports as to the condition of Wheat, Corn, Oats, and Fruit, together with experiments with Fertilizers, etc.

Clark W. Bryan & Co., *Holyoke, Mass.*, publishers of the "Paper World," "Builder," etc., have, with their rapidly increasing business, found it necessary to open an office in New-York. It is located at Trinity Building, 111 Broadway, where they will be glad to see their friends.

Fall Plowing, Profit resulting from a proper preparation of the soil. Also **Culture of Grass,** Poor catches, Failure of Seeding, Loss by dry weather and insects, Its failure attributed to the right cause. Two articles by Dr. Henry Stewart. Published in pamphlet form by *Nash & Brother*, Millington, N. J.

Diffusion. Its application to Sugar Cane and record of experiments with Sorghum in 1883, by *H. W. Wiley*, chemist to the Department of Agriculture.—The results of the experiments so far show that the yield of sugar from this method is just about double that obtained by the large factories at Rio Grande, Champagne, and other places.

"The Tribune and Farmer," formerly published at Philadelphia, has followed "The Continent," and transferred its home to New-York, "the acknowledged commercial and literary head of this commonwealth." It changes, at the same time, from a four to an eight page paper, and shows decided improvement in general appearance as well as in its contents.

The Diet Question. Giving the Reason Why, from "Health in the Household," by *Mrs. Susanna W. Dodds, M.D.* 12mo, paper, 25 cents. Fowler & Wells Co., Publishers, 753 Broadway, New-York City.—This book gives the reason why some articles of diet are better than others, more economical as well as more healthful. It also gives tables showing the constituent elements of different articles of food; the relation of food to physical development as well as to intellect and morals.

Godey's Lady's Book for August is an especially good number, and, considering the high standard of this excellent magazine, this is perhaps as generous praise as could be bestowed upon it. The book is just entering upon its fifty-fifth year, and celebrates this mature anniversary in a fitting manner.

That all may be able to see how beautiful the book is, the publishers (J. H. Haulenbeck & Co., Philadelphia) offer to send the new volume (six months) to any address for $1.00.

Russian Apples, by *Charles Gibb*, Abbottsford, Quebec, Canada. A treatise on the varieties of Apples imported by the United States Department of Agriculture in 1870.—In this pamphlet the author has succeeded in bringing order into the hitherto alarming confusion of Russian nomenclature, and has condensed and translated into English many of the unintelligible names. An accompanying map gives a clear idea of the different fruit regions; and copious notes from the author's and Prof. Budd's experiences during their visit to Russia, make the work highly valuable to all interested in this important class of Apples.

"The Rural New Yorker."—It gives us pleasure to note that editor *E. S. Carman* has associated with himself *Mr. J. S. Woodward*, the well-known writer, and one of the most successful farmers of Western New-York. This is a most felicitous combination, upon which both parties are to be congratulated. Mr. Carman's energy and indomitable perseverance, combined with Mr. Woodward's thorough practical knowledge and sound judgment, cannot but result in the still greater usefulness and excellence of the paper itself, as well as to the benefit of agricultural interests in general.

"Outing" for August is a midsummer number of fresh and vivid interest. Its frontispiece is one of Garrett's best drawings, with a brief and pertinent poem by Charles E. Pratt, entitled "Art in August." Natural history is represented in a charming paper by Bradford Torrey, entitled "Scraping Acquaintance with the Birds," which shows keen and patient observation, as well as a delightful skill in putting its results into words. The editorial departments are full and interesting, as usual, and the monthly record affords recreative history which will be found worth preserving. "Outing" is gaining steadily in its hold upon the public, and its unique field is one that it fills handsomely.

Swine Products of the United States. A report from the Commission appointed by the President to examine into the swine industry of the United States, and into the allegations as to the healthfulness of the pork products of this country.—This is an exhaustive report, the result of much careful investigation. We regret not to have space to enter into its details, which prove unmistakably that our exported pork in all its forms is fully equal, perhaps superior, in its freedom from taint of every kind, either from disease or deterioration after slaughtering, to the pork of France or Germany, or any country in which the hogs are confined within a narrow compass, and do not enjoy that free run and pasturage which they get in the hog-growing regions of the United States. There is no general prevalence of disease among swine in any portion of this country.

Ohio Agricultural Experiment Station.—*Annual Report.*—This, the second report of Director *W. R. Lazenby*, more than fulfills all reasonable expectations that have been entertained at the organization of the Station under the direction of Prof. Lazenby. As during last year, field experiments with Wheat and Corn have been prominent features in the year's work. When we consider the wide area of the State over which these cereals are successfully cultivated, and their aggregate annual value, the importance of this work is at once manifest. The field experiments are not confined simply to comparative tests of varieties, or yields of definite areas under the influence of different methods of culture and different manures. They include a careful study of the quality and vigor of the seed; the growth of the root; the result of checking growth in one direction in order to stimulate it in another; the effects of self and cross fertilization; the best time and condition for performing the various processes of planting, manuring, cultivating, harvesting, and marketing; the treatment of insect enemies and diseases; a study of climatic conditions, etc. In short, the work includes all the important factors that influence the growth and fruitfulness of the individual plant. Potatoes and garden vegetables, grasses and forage plants, fruits and flowers, have also been subjects of carefully conducted experiments.

A good amount of work has been done in seeds, especially Corn. Over four hundred samples from various parts of the State were examined and tested during the year, and we have not the least doubt that these tests alone have saved to the farmers of the State more than the annual appropriation for the support of the Station.

Considering the limited means at the directors' disposal, and the short time of the Station's existence, the amount of work already done is surprising, and reflects high commendation upon the judicious management of the Board and the earnestness and ability of the director.

ANSWERS TO CORRESPONDENTS.

Keeping Winter Radishes.—*J. F. R., Lansdale, Pa.*—Any kind of pure sand or dry soil will do to pack the Radishes in. Take a box, cover the bottom with an inch of sand, place a layer of Radishes upon it, shake sand between and on them till they are entirely covered, then another layer of Radishes, and so on. The tops have to be cut off, of course, but not the end of the roots. Treated in this way, most roots will winter well.

Lilacs not Blooming.—*E. C. P., Berkeley, Cal.*—It is difficult to say why Lilacs do not bloom, without a knowledge of the conditions under which they are growing. The probability is that the soil is too rich, producing too much leaf-growth, to the detriment of flowers. In this case, transplanting to some less fertile spot may be necessary. Cutting off about one-half of all of this year's growth may also produce the desired effect. Root-pruning may also be tried.

Planting Rhododendrons.—*C. H. H., Hickman, Ky.*—In your State, Rhododendrons may be planted either in autumn or spring. In the Northern States spring planting is preferable, and also wherever the ground is not perfectly drained. The proper selection of varieties is of the greatest importance. More plants are lost from not being suited to outdoor culture than from any other cause. In our June number we gave a select list of hardy varieties.

Soil for "Starting Slips."—*W. W. F., Miller's Station, Pa.*—The best medium in which to place cuttings of nearly all the ordinary house-plants is pure building-sand. This is to be kept very wet until the cuttings become rooted. The young plants are then to be transplanted in small pots,—two to two and a half inches in diameter,—in soil consisting of about equal parts of well-decomposed manure, loamy garden soil, and sand. See article on "Soil for Pot Plants," in June number.

Cabbage Going to Seed.—*H. S., Indianola, Texas.*—The natural tendency of all Cabbages is to run to seed the first year, the heading character having been produced by long-continued cultivation and selection; and unless the most favorable conditions are provided, they will revert to the natural type—that is, go to seed. Highly enriched ground, thorough cultivation, and moisture are the best preventives against Cabbages going to seed. Wintered plants are also more apt to go to seed than those raised in the same year.

Early White Chrysanthemums.—*Mrs. S. P. H., Norwalk, O.*—The differences between florists' flowers are often so small that it is impossible to give their names without seeing the whole plant, and even then it is not always an easy task. From the description given, we should judge this to be *La Petite Marie*. This is the earliest flowering Chrysanthemum we are acquainted with, and holds out till frost. The flowers are pure white with yellow center; the plant is very dwarf, and continuously covered with flowers throughout the season.

Clematis not Blooming.—*Mrs. J. B., Decorah, Iowa*, writes: "Two years ago I received a Scarlet Clematis as a premium to THE AMERICAN GARDEN. A neighbor received one at the same time. I manure the ground heavily every year, and now my plant is seven feet high, while my neighbor's is not much over three; yet hers is in full bloom and had flowers last year, while mine had none yet." This is an excellent description of thousands of similar cases, not only with Clematis, but with other plants. Excess of manure produces leaf-growth, while it diminishes the tendency to flowering. If manure is withheld, the plant will, no doubt, bloom next year.

FROM OUR FRIENDS.

I like THE AMERICAN GARDEN immensely. It is constantly improving.—*C. M., St. Louis, Mo.*

I find sufficient information in a single number of THE AMERICAN GARDEN to pay the cost for a year.—*Mrs. J. E., Chicago, Ill.*

The cover is a great improvement. It not only looks well, but preserves the paper in nice condition for binding. I like THE AMERICAN GARDEN exceedingly.—*E. M., Portland, Me.*

I am much pleased with THE AMERICAN GARDEN. The instructions contained in it are good and reliable, and the illustrations are beautiful. I cannot do without this paper.—*C. W. B., Washington Co., Utah.*

THE AMERICAN GARDEN pleases me very much. I enjoy every word of it, and the colored plates are simply exquisite. It is especially gratifying to me to hear that you mean to keep the paper strictly and exclusively horticultural. Long may you think so!—*Mrs. J. B. C., Cambridgeport, Mass.*

The American Garden Unsurpassed as an Advertising Medium.—*From the Buhach Producing and Manufacturing Co.:* "Out of a large list of agricultural and horticultural papers in which we have advertised this season, THE AMERICAN GARDEN has been surpassed by none, and equaled by but one. It has brought us vastly larger returns than papers which cost us four times as much.—JAS. E. CONDON, *Manager.*"

TAKE NOTICE.

For 50c. (in stamps) 200 Elegant Scrap Pictures. No two alike. F. WHITING, 50 Nassau St., N. Y.

Campaign Goods.—*E. Nason & Co.*, 120 Fulton St., New-York, whose offers of Badges, Uniforms, Torches, etc., will be found elsewhere, are an old established house, and can furnish everything in their line.

Ladies' Fancy Work.—A lady reader says: "Seeing the advertisement of *J. F. Ingalls, Lynn, Mass.*, in your paper, I sent for a copy, and I never invested 18 two-cent stamps to better advantage. The patterns are just splendid."

Ivory Soap, manufactured by Procter & Gamble, Cincinnati, and for sale by nearly every grocer, has rapidly secured an enviable reputation throughout the land. This is not at all surprising, as it is really a complete and perfect soap, which cleanses thoroughly without injuring the fabrics in the least.

Heating Greenhouses.—Now is the time to see to it that the heating and ventilating apparatus of the greenhouses is put in order. Any one in need of anything in this line will find it to his advantage to send to *Hitchings & Co.*, 233 *Mercer St., New-York*, for their Illustrated Catalogue, announced in our advertising department.

The New England Conservatory of Music.—An institution of which all Americans feel proud, and in which so many are directly interested, is the New England Conservatory of Music, which begins its Fall Term under the most favorable auspices. In its New Home, which has ample accommodations for 500 lady students, it has been a gratifying success. 1971 students, representing 49 States. Territories, the British Provinces and Foreign Countries, have been in attendance during the past, with every prospect of an increased number for the coming year.

Fruit and Wine Presses.—The manufacture of Fruit Wines, Butters, Jellies, Marmalades, etc., for family use, has increased very greatly during the past five or six years. The credit for this new departure is largely due to the Combination Fruit Press, made by the Enterprise Manufacturing Co., Philadelphia. This valuable machine presses all kinds of fruits and berries, and with it every family can make its own Grape, Currant, Blackberry and other Wines and Cordials, for domestic or medicinal purposes, as well as Fruit Butters, Jellies, Marmalades, etc., of all kinds, and be assured of their purity and excellence. For further particulars concerning the Press, we refer our readers to the advertisement in this issue.

CATALOGUES RECEIVED.

Wm. Parry, *Pomona Nurseries, Parry P. O., N. J.*—Circular of the new Strawberry, "Parry," giving its History, Description, etc.

J. T. Lovett, *Little Silver, N. J.*—Summer and autumn catalogue of pot-grown and layer Strawberry Plants, with full descriptions and cultural directions.

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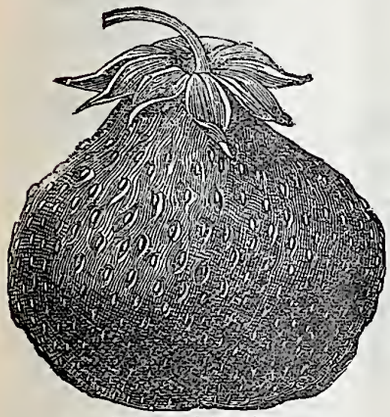

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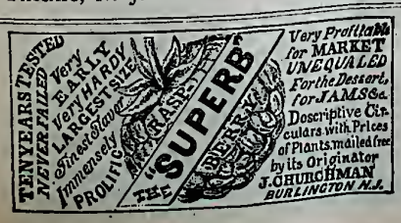

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2272.	**Wallflower,** extra fine double German	.15

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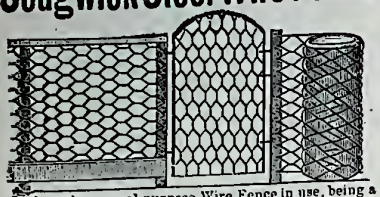

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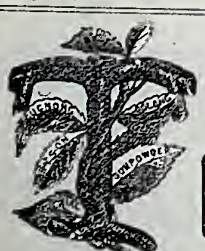

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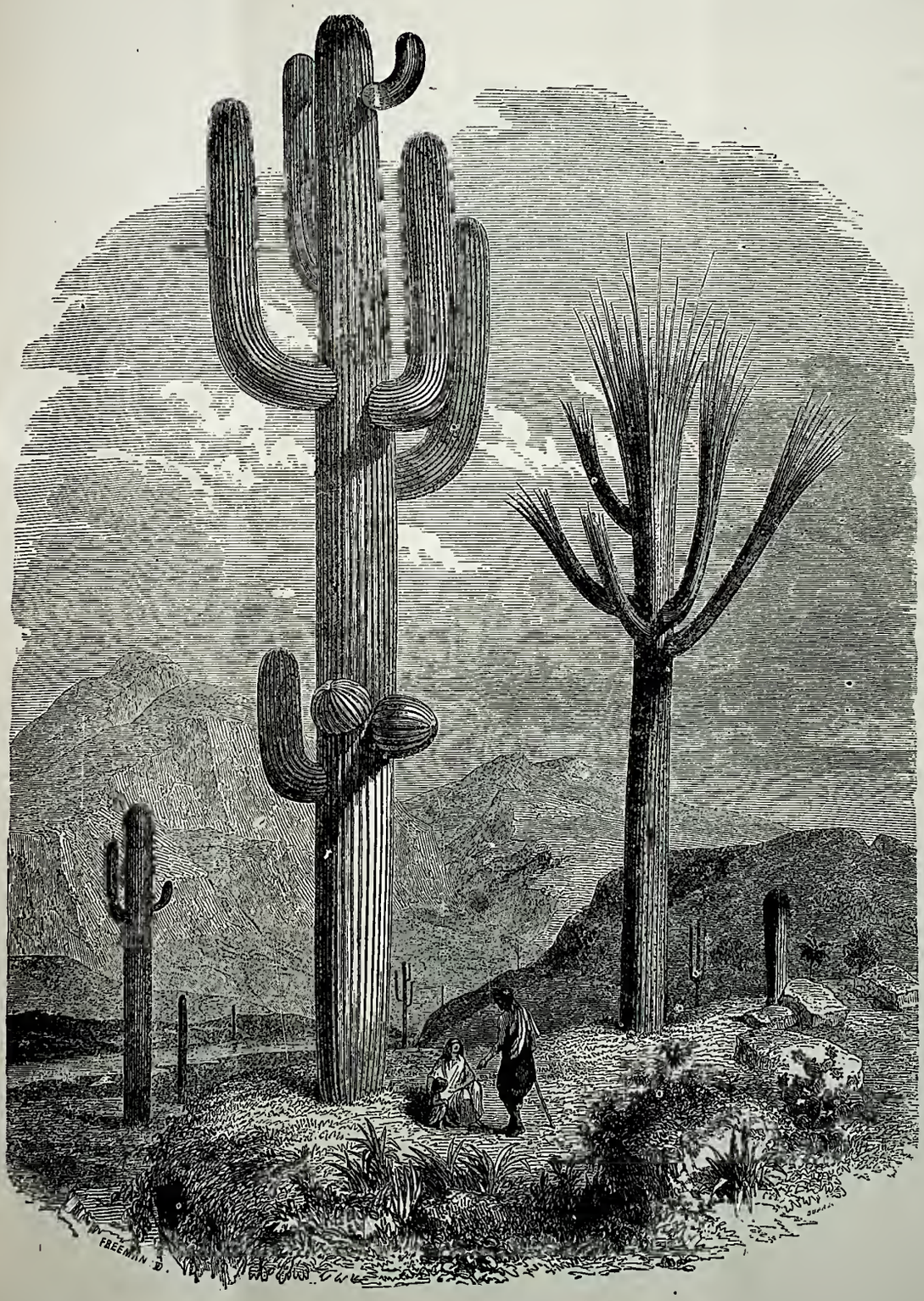
The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, SEPTEMBER, 1884. No. 9.



GROUP OF WILD MEXICAN CACTUS.

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The Vegetable Garden.

SEASONABLE HINTS.

A properly managed garden should now present as neat and clean an appearance as at any season, and to have it in such a condition pays well in more than good looks only. If successive sowings of the principal vegetables have been made, there will be more abundance and a greater variety during this month than at any other period.

Celery.—"I have always raised good Celery in trenches, and do not feel inclined to change for some untried plan," comments one of our readers upon our recommendation, of last month, to plant Celery on level ground, instead of in deep trenches. We do not believe in "letting good enough alone," when we can better it, and especially when, as in this case, the plan is not only far from untried, but is followed by almost every progressive market gardener in the land. Market gardeners are generally not slow in adopting new methods which afford advantages over older, more laborious, and less profitable ones. But in the family garden, also, this method is decidedly preferable, and its general introduction has been more instrumental in popularizing this peerless winter vegetable than anything else.

To test the relative advantages of the two methods, Dr. E. L. Sturtevant, Director of the New-York Experiment Station, subjected them last year to careful trials. The list of varieties included twenty named samples; one hundred seeds of each were planted in boxes, April 11th and 12th, and placed in a cold frame, where they were covered during severe weather. On July 5th thirty of these plants were set in a trench, one foot deep, well manured at the bottom with thoroughly rotted horse-manure, and thirty plants were planted adjacent upon the level without special manuring.

The first data noted were that the varieties of Celery required from twenty-six to twenty-eight days to vegetate their seeds, and one hundred seeds produced upon the average fifty-seven plants—the variation between varieties being sixteen per cent. of vegetation for Seymour's Solid Red, and eighty-one per cent. for Giant White Solid. Averaging the results obtained in seventeen samples in which the varieties from the two rows are separately noted, it was found that, omitting fractions, plants grown under level culture averaged one hundred and seventy-seven pounds per hundred plants, while those under trench culture averaged one hundred and seventy-eight pounds per hundred plants. The length of the bleached stems was rather greater, and the suckers were rather more numerous upon the plants grown in the trenches; but, on the other hand, the bases of the stems were more often split and deformed than occurred in the plants grown upon the level. It appears, therefore, from this trial, that the trench culture yielded no advantage for the increased labor involved.

Spinach for winter use should be sown, without delay, in liberally manured, thoroughly worked beds. Better keep the seed in the paper bag than attempt to raise a crop of Spinach on poor soil. Sow in drills a foot apart; use plenty of seed, and when well up thin out so that the plants stand from three to four inches apart.

MORE ABOUT POTATO SCAB.

In confirmation of the opinion expressed in our former issues that scab is not caused by manure nor wire-worms, the experience of our correspondent *F. A. B.*, in Massachusetts, is of considerable interest. He writes:

"The past season I planted White Elephant Potatoes, side by side, on old ground that had been planted three years, and also on new sod ground; used horse and cow manure broadcast, also Mapes's "A Brand" Fertilizer in the hills. The Potatoes on old ground were very scabby, while on the new ground they were as nice and smooth as you could ask for. Now, had the old ground lost some properties necessary to the proper development of the tubers? and what was it? If not, why should they grow smooth on the new ground, all other conditions being the same? I hunted carefully for wire-worms but could not find one. I had about as good a crop on the old as on the new ground, and satisfied myself that honest chemical fertilizers pay, even if you have animal manure."

Another instructive case bearing upon this question, in which scab occurred without the agency of wire-worms or manures, is reported in the New-York *Tribune*, by H. Wadley, of Iowa:

"In my root cellar is a place holding about ten bushels, sunk two feet below the surface, where we always put our late-keeping Potatoes. Last season the hired girl, about June 1st, reported them all gone. I did not go down until about August, when I moved a box that was standing over one end of the hole, where I found about two bushels of Mammoth Pearl Potatoes, and in removing them I found new Potatoes among them as large as my fist, squeezed into all shapes, and I thought I would cook some of them; and when I cleaned the dust from them they were completely covered with scab—some just beginning to come, some eaten into the tubers more or less. When I put the Potatoes in cellar I picked out every one that I thought was scabbed at all. I believe it to be a fungous growth of some kind."

MUSHROOM CULTURE IN NEW JERSEY.

The French method of cultivating Mushrooms, as given in a recent number of THE AMERICAN GARDEN has furnished many valuable suggestions to growers, and as an additional contribution to the knowledge of this subject an account of the successful culture at the Nichols Farm, Millburn, N. J., may be of interest to many. This place is noted for the fine Mushrooms it sends to the New-York market, and which sell at a remunerative price.

Here an old hot-house has been changed into a house for Mushroom culture. All the glass and sashes have been removed and the sides and roof boarded up. Small rooms are partitioned off, and beds arranged somewhat after the manner of the berths in staterooms of steam-boats. Heat can be supplied when needed.

Horse-manure freshly made is the basis of the heating material for the beds. The coarsest part of the straw is removed, yet leaving a good proportion of the short, say a foot long, with the dropping. The manure heap is turned over two or three times until the violent heat and smell have left it. Thus prepared, the manure is placed in the beds to the depth of about fifteen inches—in a manner similar to that of making hot-beds—and left to heat again. If found to remain too cool it is covered with hay to assist in raising the temperature. Should the heat rise over 120° Fahr., the beds are made over again. When the temperature is at about 98°—never above this—it is time for spawning. English spawn is preferred to the French.

The spawn is placed in lumps about the size of hens' eggs, every eight inches and four inches deep. In ten or twelve days it is examined to see if the threads of the spawn have penetrated all parts of the surface, when it will be found that the threads have followed along the straw contained in the heap. In case all straw has been removed, more time is required.

As soon as the spawn has penetrated the mass, inverted sods, taken from good, rich soil, about two inches deep, are placed over the entire bed. In from four to six weeks, the Mushroom will generally appear over the surface. For early crops the beds are made in September, for the later in November. The best temperature for a Mushroom-house is 65°; if much above this the Mushrooms run to stem, if below 50°, they cease to grow, and between 60° and 50° they are very apt to become tough. In very cold weather artificial heat is provided. These beds will supply Mushrooms from two to three months. Water is given only when necessary, and then only in small quantity at a time, in order not to dampen off the stems.

One of the greatest enemies to the Mushroom is the wood-louse. To guard against this the house and beds have to be kept very clean, and all the wood-work is thoroughly whitewashed. J. B. ROGERS.

RAISING SEEDS.

Many farmers and gardeners save at least a portion of the seeds they want for their own use. Of course, some are careful to save only the best; and where this is done with a practical knowledge of how to improve the stock, the plan is a good one. Yet in a majority of cases good seeds can be purchased from those who make seed-growing a business cheaper than you can raise and save them.

A common mistake is to save only the largest seeds, irrespective of other qualities. In many vegetables earliness is as much desirable as size, while quality should never be lost sight of. To pick for the table all the Peas or Beans that mature first, and take what happens to be overlooked for seed, will surely cause a serious deterioration, which will soon cause a considerable difference not only in the quality, but the quantity of the yield. If you want to save seed from these, select one portion of the crop for seed, and do not allow them to be picked. Select the earliest matured and best of those only for seed. It is only by taking considerable pains in this respect that the quality can be kept up.

Of plants that mature seed the second year, such as Parsnips, Salsify, Turnips, Beets, Carrots, etc., smooth specimens must be selected early, and pains taken to save them in the best condition possible.

N. J. SHEPHERD.

THE WATER-CRESS.

Though not a native of this country, the Water-cress, *Nasturtium officinale*, has become naturalized in many of our smaller streams. It finds its most congenial habitat in the limpid brooks that flow from springs, over a sandy or gravelly bottom. Though it sometimes grows in still water, a gentle current suits it best, in which the plants often grow so thickly as to retard, to a considerable degree, the passage of the water. Once established, it becomes a permanent resident, requiring neither manuring nor rotation.

As a salad plant, the Water-cress has been popular, where known, from time immemorial. It is indigenous to the rivulets of Europe and Asia, and we may easily imagine that, centuries before the rude beginnings of the art of horticulture, the unlettered savages were accustomed to enjoy its tender foliage, before the first terrestrial herb had showed itself in spring. We know that Xenophon, the learned Greek historian, was fond of Water-cresses, and strongly recommended their use to the Persians; and among the Romans this piquant herb was believed to possess virtue as a remedy for insanity. Hence the ancient proverb, "Eat Cress and learn more wit."

It was not, however, until comparatively modern times that attempts seem to have been made to grow the Water-cress artificially. It is said that one Nicholas Meissner, a resident of Erfurt, in Germany, first succeeded in cultivating it, about the middle of the sixteenth century. At the present time it is produced in large quantities for the Paris and London markets, and in our own country its culture is beginning to receive attention in a few localities. Doubtless many brooks in the neighborhood of our large cities might be made to serve a profitable use through the introduction of this plant. The culture of the Water-cress is said to prove a very remunerative industry where it has been undertaken. Really favorable locations, however, are not very common.

A springy swamp, surrounded by higher ground, and lying in such a way that the water, when collected into a stream, can be conducted back and forth, through narrow canals, over a gently sloping meadow, offers the best possible conditions. Cresses will thrive, however, in almost any brook that flows directly from springs, and hence does not freeze in winter. By starting a few plants at the outlet of the springs, the seed from them will, in a season or two, be distributed throughout the whole length of the stream, and the Cresses will soon take possession of their field, or they may be started sooner by depositing the plants along at various places, in the brook or canals. The latter, if dug, should be about six feet wide and eight inches deep, provided the water is sufficient to produce a slight current throughout the whole width. It is well, if possible, to have a flood-gate at the outlet of the canal in order to hold back the water in winter, so as to completely cover the plants; but this is not indispensable, as, if the stream is of spring water, the plants will not be much injured by frost.

In gathering the plants, a plank is laid across the stream, on which the workman stands, gathering the leaves into a bunch with the fingers of the left hand, cutting off the stems with a sharp knife three or four inches below. The Cresses are then placed upright, in the bottom of a small, deep basket, until a compact layer is formed, when a second layer is placed above this, and so on until the basket is filled, when a string is tied over the top, or the baskets are packed in crates for shipping. A basket is sometimes filled on a space two feet square, and often sells at seventy-five cents wholesale. It is said that the lowest price that is received in the New-York market is twenty cents per basket; and, at this rate, a bed one thousand feet long would yield in the neighborhood of three hundred dollars a crop. When it is understood that three

WATER-CRESS.

crops may be gathered during the spring and summer, it appears that the business is a lucrative one. The upper part of the stream may be covered with sashes, at the beginning of winter, to retain the warmth of the water, when two crops may be taken in the winter from this portion of the bed. These winter crops usually prove most profitable of all.

Geese and ducks, as well as cattle, are fond of Water-cresses, and hence should be kept out of the meadow, at least during the earlier part of the season. A flock of ducks may be turned in with advantage after the plants have seeded in August, as they will clear the Cresses of snails, which sometimes

MARTYNIA.

infest them. The small turtles that frequent such streams also feed upon snails, and are hence beneficial. In some cases trout might, perhaps, be reared in the streams with additional profit. "ELM."

MARTYNIAS.

Few plants in our garden attract more attention than this odd-looking vegetable, or flower — for it is both in one. It is of very rank, rather coarse growth, branching and spreading profusely several feet in all directions. The leaves are large and broad, and the flowers are very pretty and showy, resembling in shape those of the Trumpet Creeper, to which family it belongs. The young pods, which are produced in great abundance, are used for pickling, and form an important part of the "fancy pickles" of our markets. When full grown the pods are three to four inches long, and terminated by a hooked beak; but it is only when quite young that they are fit for use; when older they become hard and woody. The plant is a tender annual, and requires a treatment similar to that of the Tomato.

Martynia proboscidea is the species generally cultivated, but there are several other kinds which may be used for the same purpose, and are equally ornamental.

CORN CUT-WORMS.

Among the Corn cut-worms, says *Prof. J. A. Lintner*, in answer to an inquiry from a correspondent of the New-York State Experiment Station, some of the species do their work beneath the surface, others cut the stalks at the surface, and others still at about an inch above the ground.

We know of no effectual way of driving these pests from the Corn attacked by them, or for killing them while buried in the ground during the day, by any application that we can make. Lime, salt, ashes, and similar substances have been found to be of no avail. Winged insects may be driven away, but these were in the soil long before the Corn was planted (since the preceding autumn), and will have their living from it until they reach their maturity, unless they can be meantime killed. Thorough autumn plowing, quite late, when the caterpillars had become lethargic from the cold, would have destroyed many.

The caterpillar in this case "cuts off the Corn soon after it comes up, just at the surface of the ground," and probably drags the cut-off portion into his retreat beneath the surface to feed upon it at his leisure during the day. His food can be poisoned by dusting Paris green or London purple over the plants while wet with dew. As the more economical and less dangerous in its use, he would ask that the experiment be made with London purple, mixed with flour to a proper degree of dilution, which shall be found by first testing it upon a few hills — perhaps one part of the purple to twenty of flour. If care be used in the application so that the powder shall reach the stalks of the Corn at the point where they are cut off, the small portion of the poison consumed in the cutting-off operation would probably suffice to kill the caterpillar.

The other method, which is known to be effectual, is to employ the cheap labor of boys, by having them go over the field a few times (four or five times at proper intervals are usually sufficient), and dig out and destroy the caterpillars from the hills showing the attack. They are easily found — sometimes as many as five in a hill. A writer who states that he has always found this method successful, bears this testimony in its favor: "One year, on six acres, the worms had begun in such numbers that it was obvious that the Corn would be destroyed unless something was promptly done. We set two men at work, who continued at them for ten days, on and off, amounting to four days' work in all, and costing one dollar per acre, and entirely saving the crop of over three hundred bushels."

The Fruit Garden.

SEASONABLE HINTS.

The Fair Season.—Every visitor at a fair knows that the easiest thing in the world is to find fault with the labeling of the fruits, the arrangement of the plates, and management in general; but only those who have had the charge of such exhibitions are aware of the many, and not a few unsurmountable, difficulties which beset the way of the officers. Advice is generally as plentiful as mosquitos in a swamp, but feasible means are rarely brought to light. The eminently practical suggestions of *Mr. Chas. W. Garfield*, Secretary of the Michigan Horticultural Society, in this regard, are therefore well worth the attention of those in charge of our horticultural exhibitions. He says:

"My two points are these: First, we need to make progress in the labeling of our fruits and other entries. We should have all the prominent exhibits so clearly labeled with cards and placards as to give all the information necessary. Money could not be better expended than in the employment of a skilled man to paint signs and cards during the fair; and I would even go so far as to have the prominent awards placed upon a large bulletin-board, so people could read. These features connected with labels are of the greatest importance to newspaper men.

"My second point is that a great deal more attention be given to skill in ornamenting exhibits. Even a single plate of Grapes may be made to appear twice as beautiful if placed upon the leaves of its own variety. I suggest whether prizes for special work in this direction may not well take the place of our awards for correct nomenclature for a few years."

Planting Strawberries.—Potted plants may still be planted; but at this season, when the soil and air are damper and the temperature lower, there is not so much gained over layer plants as in midsummer. Good plants, now set out properly in well-prepared, moderately rich soil, will produce about one-third of a full crop next year.

Extending the Strawberry Season.—In New-York the Strawberry season commences about New Year, and ends some time in August, and by supplementing with forced greenhouse fruit there is hardly a month in the year when Strawberries are not to be had in our markets. But not all are so fortunate—or unfortunate, as the case may be—to live within city limits, nor have all the means to pay the price for such luxuries, which, after all, are but a poor substitute for home-grown, fresh, ripe, seasonable berries.

The bearing period of a variety lasts generally not over two, and rarely more than three weeks; but by a judicious selection of early, medium, and late kinds, the season may be considerably lengthened at both ends. Now, when making new Strawberry beds, it is proper to give this matter careful attention. Appropriate selection of soil and situation exerts also considerable influence over the time of ripening. Early kinds planted on dry, warm soils with southern exposure will mature several days sooner than otherwise; and late varieties on heavy soils with northern exposure, especially when kept well mulched, will be retarded.

CHANGES IN NOMENCLATURE.

It is gratifying to note that the names of fruits changed by the American Pomological Society are being generally adopted. In our last issue we gave those of the small fruits; the following lists comprise the changes in the leading tree fruits:

APPLES.

Name rejected.	*Name adopted.*
American Golden Pippin	American Golden.
American Summer Pearmain	American Summer.
Carolina Red June	Carolina June.
Chenango Strawberry	Chenango.
Cooper's Early White	Cooper's Early.
Cox's Orange Pippin	Cox's Orange.
Danver's Winter Sweet	Danver's Sweet.
Duchess of Oldenburg	Oldenburg.
Early Red Margaret	Early Margaret.
Hubbardston Nonsuch	Hubbardston.
Jewett's Fine Red	Jewett's Red.
Kentucky Red Streak	Kentucky Red.
King of Tompkins County	Tompkins' King.
Kirkbridge White	Kirkbridge.
Large Yellow Bough	Sweet Bough.
Marquis of Lorne	Lorne.
Marston's Red Winter	Marston's Red.
Otoe Red Streak	Otoe.
Pleasant Valley Pippin	Pleasant Valley.
Pyle's Red Winter	Pyle's Winter.
Striped Sweet Pippin	Striped Sweet.
Tewksbury Winter Blush	Tewksbury Winter.
Twenty Ounce Apple	Twenty Ounce.

PEARS.

Belle Epine Dumas	Epine Dumas.
Beurre Bosc	Bosc.
Beurre Clairgeau	Clairgeau.
Beurre d'Amanlis	Amanlis.
Beurre d'Anjou	Anjou.
Beurre de Brignais	Brignais.
Beurre Diel	Diel.
Beurre Giffard	Giffard.
Beurre Hardy	Hardy.
Beurre Langelier	Langelier.
Beurre Superfin	Superfin.
Bonne du Puits Ansault	Ansault.
Dearborn's Seedling	Dearborn.
Doyenne Boussock	Boussock.
Doyenne d'Ete	Summer Doyenne.
Doyenne du Comice	Comice.
Dr. Bachman	Bachman.
Dr. Lindley	Lindley.
Duchesse d'Angouleme	Angouleme.
Duchesse de Bordeaux	Bordeaux.
Golden Beurre of Bilboa	Bilboa.
Jalousie de Fontenay Vendee	Fontenay.
Josephine de Malines	Josephine of Malines.
Knight's Seedling	Knight.
Louise Bonne de Jersey	Louise Bonne of Jersey.
Nouveau Poiteau	Poiteau.
Paradis d'Automne	Paradise of Autumn.
Petite Marguerite	Margaret.
Supreme de Quimper	Quimper.
Triomphe de Jodoigne	Triumph of Jodoigne.
Vicar of Wakefield	Vicar.
Winter Jonah	Jonah.

PEACHES.

Amsden's June	Amsden.
Austin's Late Red	Austin's Late.
Cole's Early Red	Cole's Early.
Cook's Late White	Cook's Late.
Crackett's Late White	Crackett's Late.
Early Albert	Albert.
Early Beatrice	Beatrice.
Early Louise	Louise.
Early Rivers	Rivers.
Early Tillotson	Tillotson.
Harker's Seedling	Harker.
Hoover's Late Heath	Hoover's Heath.
Van Zandt's Superb	Van Zandt.
Ward's Late Free	Ward's Late.

CHERRIES.

Blaarreau of Mezel	Mezel.
Early Purple Guigne	Early Purple.
Empress Eugenie	Eugenie.
Knight's Early Black	Knight's Early.

DWARF PEARS.

In reply to the inquiry whether Dwarf Pears can be grown successfully in a drained swamp, *P. T. Quinn says in the N. Y. Tribune*:

"When swamp-land has been thoroughly drained, worked, and manured sufficiently to make it pay for market gardening, there is no doubt that dwarf Pears will grow freely and thrive for a time on such a soil. But it should be constantly kept in mind and practically carried out, that the soil must be kept free from stagnant water and in good heart. It is also necessary that the trees be planted with care and judiciously pruned at the time of planting. If it were a question between upland and well-drained swamp-land, the practical Pear-grower would always choose the upland situation, other conditions being equal. There is always more or less danger of getting a late succulent growth of young wood on swamp-land that is rich and moist, especially when the soil is fertilized with unfermented manures. Besides, there is something to be feared from late frosts while the trees are in blossom, on such low, damp places. But these drawbacks are not formidable enough to prohibit planting Pears with fair prospects of profit on such land, provided a good selection of trees and varieties is made.

"This brings us to the most important consideration in laying plans for planting a Pear orchard—the choice between dwarfs or standards. To treat this question intelligently, it will be necessary to refer briefly to the history of Pear culture in this country. A quarter of a century ago the opinions which found their way into print on this subject, in nine cases out of ten, emanated from nursery-men, and the exceptions to this rule came from those who took their keynote from the same source. Now, every practical man knows that it is much easier and very much cheaper to grow dwarfs in the nursery than it is standards. This uniform and rapid growth of dwarfs in the nursery, putting aside the larger profits, led nursery-men to advocate the planting of dwarfs in preference to standards for orchard purposes, and, as a natural consequence, dwarf Pears were planted extensively in every section of the country, on the recommendations from the sources named. As a matter of course, time and practical experience were essential elements to test this important question.

"I was one of the thousands who were led to plant dwarfs on an extended scale, and now, with an experience of twenty-five years in growing Pears for profit, and having during that time an unusual opportunity for observation both in this country and Europe, I can speak with some authority on this subject.

To be brief in summing up the case, I would simply state that if I were about to plant a Pear orchard now, and could get dwarf trees for nothing, and I was compelled to pay five hundred dollars a thousand for standards, I would not hesitate a moment in making the selection of standards. The tempting theory that dwarfs will bear fruit in a couple of years from the time of planting, is a dangerous and bad theory to practice. A Pear tree should not be allowed to bear any fruit until it is five or six years in place, and one healthy standard Pear at twelve years of age is worth a dozen of dwarf trees kept as dwarfs at the same age."

NEW SEEDLING LIME.

Our illustration shows a natural-size representation of a new seedling Lime which has recently been raised in southern California. It is supposed to be a cross between a Lime and a Lemon, as it partakes somewhat of the characteristics of each. The fruit is a little larger than the ordinary Lime and milder flavored. The tree, or bush rather, is highly ornamental in appearance, more so than any of the Citrus tribe, thus making it doubly valuable. So far, Lime culture has made but little progress in California, as the trees are more tender than the Orange, but experiments in grafting them on the latter have shown that they become hardier by the operation. For southern Florida, below the frost line, Lime culture may offer a promising field.

NEW SEEDLING LIME.

STORING APPLES.

We (the writer does not constitute the whole firm) have always kept Apples largely over winter, and not infrequently till Apples came again. We have been very successful in preserving them in good condition. Our plan is this:

We pick the Apples as soon as they are ripe in the fall, and are always careful to put no bruised ones among those we intend to keep over winter. Some varieties are more easily bruised than others and must be handled carefully. Apples are not so apt to be bruised in picking as in handling afterward. As straw in the measures is a source of continual annoyance, we tack cloth or a couple of thicknesses of leather over cotton in the inside of the measures, to prevent bruising when the fruit is handled.

As soon as the Apples are gathered they are put in heaps in the orchard and there left till there is danger of their being frozen. The most important point in the preservation of Apples is to keep them dry, and we do not forget this when heaping them in the orchard. Boards are laid upon loose cross-pieces to make a floor. Upon the boards is put a light layer of straw. Boards are laid against stakes driven at the sides, and after the Apples are put in (not more than eighteen inches deep) a tight board roof is placed over them, but raised six inches from the Apples, to admit of plenty of air getting to the Apples. Apples can be stored in a vacant corn-crib, clean stock shed, or under any airy shelter, but we find it more convenient to thus heap them up in the orchard. Wherever placed they must not be put upon the ground, and the floor upon which they are laid must be fully six inches from the ground, to prevent the fruit from drawing moisture. When Apples are stored they pass through a "sweat," and must not be disturbed while in this sweat.

When there is imminent danger of their freezing we bring them from the orchard and store them in the cellar, putting them in bins raised at least a foot from the floor. The cellar is dry and well ventilated, and kept at as low a temperature as dare be. No straw is used in the bins. If we desire to keep the Apples till June or July we sort them over every two or three weeks after April 1. They do not begin to rot till that time, and if the rotten ones are kept picked out very few of such Apples as the Ben Davis will rot before June. They come out fresh and solid in the spring, crisp and juicy, and more palatable than in the fall.

We have tried burrowing Apples, but do not like the burrow so well as the cellar. We made the burrows by digging wide trenches a foot or more deep; putting the Apples in a pointed, continuous heap, and covering them with a light covering of straw and a heavy one of soil. The Apples wintered very well, but soon rotted when brought from the pit.

I notice in the report of the last meeting of the American Pomological Society that the Kansas orchardists have learned this in the bitter school of experience. On account of the heavy crop and low prices of 1882, many orchardists, not prepared with suitable conveniences, adopted the method of storing out-of-doors, protected with straw and dirt. The reports state that when opened in the spring such lots were apparently in good condition, and they were put upon the market; but they perished soon, and losses occurred to the purchasers. I have noticed this always; and I have frequently heard farmers, who stored their home supply of Apples in pits, remark that the fruit began to rot as soon as the pit was opened in the spring. I do not know how to account for this unless it is because the Apples are kept damp, and I have found, as before stated, that dampness decayed Apples more than anything else. In a pit they are kept quite damp, as any one who has pitted Apples knows; for no matter when the pit is opened the Apples will be found quite wet. Apparently they absorb moisture, and this increases fermentation when exposed to the air. They do not rot while in the pit because the covering of straw and earth is almost impervious to air, and the Apples may be said to be canned up.

JOHN M. STAHL.

PEAR BLIGHT.

In a recent bulletin of the New-York Experiment Station, Professor J. C. Arthur, the Station Botanist, gives the results of his experiments with Pear blight, which, although not yet conclusive, throw a great deal of light upon the nature of this destructive disease.

The most remarkable results yet secured were obtained by inoculating the fruit of the Bartlett Pear with a watery infusion of diseased Pear stem. On the sixth day they were all blackened for some distance around the point of inoculation, and exuding a copious flow of yellowish fluid, which ran down the side and dropped on the ground. In fact, each was a great running sore. Upon cutting open the Pears, they were found to be discolored almost throughout their interior. Inoculation, at the same time, on Quince fruits showed the disease in seven days, but without any exudation, and upon cutting them open, only about one-fourth the interior was affected.

As a general statement, which is fully sustained by the experiments so far tried,—some sixty in all,—the professor holds that the disease known as Pear blight is infectious, and may be transmitted from one tree to another by inoculation.

Under the microscope, any bit of diseased tissue shows inconceivable myriads of minute bacteria, which fill the water of the slide in which it is mounted, like a cloud. It is, therefore, not necessary to depend on external appearances in order to determine the progress of the disease in a branch, for the microscope will decide with absolute certainty. There cannot be a rational doubt that bacteria are the cause of this disease of the Pear and other pomaceous fruits.

The Flower Garden.

FORGET-ME-NOT.

I set a slip out in the brook,
  And lo! it grow, and spread and grew,
Till, by the sun and moisture fed,
It filled each winding curve and crook,
  And blossomed into heavenly blue.

Out through the bridge it wandered then,
  And filled with bloom the road-side stream;
Who now behold its wondrous hue,
And gaze into its starry ken,
  Enraptured with its beauty seem.

"Forget me not!" the lover cried,
  "For thee I meet a watery death."
He threw the blossoms to her side,
And, sinking, with his latest breath,
  Cried still, "O love, forget me not!"

Thus christened was my lovely flower;
  Baptized with love's delicious breath;
Albeit dearly sought and won—
And two fond hearts were from that hour
  Asunder riven until death.

O precious flower! O sweet and rare!
  Nurtured by stream and sun and wind,
And fed by grateful dews and showers,
Is this the secret of your power,
  Which charms alike all human kind?

I watch the children come and go,
  And older ones my blossoms seek,
Enchanted with their loveliness:
And as I see their faces glow,
  I feel a joy I may not speak.

My tiny slip was planted well;
  Its harvest hath been full of bliss;
So a kind word or deed may prove
A blessing unawares, and swell
  The stream of human happiness.

Our lives are fraught with weal
    and woe—
  As gold is tempered with alloy;
And this is true, what else is false:
The sweetest joy that one can know
  Is that of giving others joy.

[The author—whose name is not known to us—some years ago planted a few slips in a stream of running water. These grew and increased so rapidly that in three years they had followed the water-course for a considerable distance. "As I watch the children," he says, "gathering these incomparable blossoms, and see older persons coming from long distances to obtain plants for their gardens, and remember that all the plants which now give pleasure to so many came from the few slips set out by myself, I realize how much enjoyment one may find in contributing to the enjoyment of others."]

SEASONABLE HINTS.

Lilies may be planted in spring or autumn, but in our experience we have found the latter season decidedly preferable, with the exception of *L. auratum*, perhaps, which, unless the ground is very congenial, is apt to rot. The bulbs start so early in spring that they cannot always be planted soon enough. Lilies are so easily grown, and are so varied and beautiful, that we could never fully understand why a collection is not found in every garden. They thrive in any good garden soil, among perennial plants, in the mixed border, or in separate beds. The only condition which is essential to their success is never to have any standing water at their roots, especially during winter.

NARCISSUS.

There are in all about twenty species of Narcissus found in a wild state, mostly in different parts of Europe, and but very few in Africa and Asia. All of them are pretty and interesting, but the wonderful variety and beauty found in the cultivated Narcissus of the present day have been the result of careful and manifold hybridizations and crossings. The principal types of these are well shown in the accompanying excellent illustrations, for which we are indebted to *Messrs. Woolson & Co.*, who make a specialty of this class of plants.

N. maximus, the Large Trumpet Daffodil.—Large bright yellow, very early; one of the best single varieties.

N. Pseudo-Narcissus, Lent Lily, the common Daffodil, or Daffodowndilly.—Yellow trumpet, sulphur perianth; found both single and double.

NARCISSUS MAXIMUS. N. JUNCIFOLIUS.

N. incomparabilis, Single Orange Phœnix.—Flowers large, primrose, with sulphur crown.

N. juncifolius, Rush-leaved Pyrenean Daffodil.—Flowers small, golden-yellow.

N. poeticus, Poet's Narcissus.—Flowers pure white, with a distinct red crown.

Nearly all the species and varieties are of easy cultivation and hardy here in the open ground; and it is a notable fact that, with the exception of *N. Bulbocodium* and its varieties, the bulbs grown in this country—although their cultivation has been undertaken but recently—are already rivaling the imported ones. It is, therefore, highly probable that, as is already the case with Tuberoses and Gladiolus, America will soon be prepared to compete in these bulbs with European growers.

Narcissus succeed best in a rich, loamy soil, planted four to six inches apart, and the crown covered with three inches of earth. They may be planted at any time from September till the ground freezes, and it is best to let the bulbs remain in the same place for several years, to become well-established clumps; in fact, they need not be taken up at all, so long as the flowers are produced abundantly. Keeping the ground clean, and applying a good coat of well-rotted manure each fall, is all the care they require.

They are also excellently adapted for forcing, and may be planted in pots and placed in a cold frame or cool cellar, and brought into the house as needed for flowering. In potting, the neck of the bulb should not be entirely covered with soil, so as to admit sufficient room for abundant root-growth; otherwise the treatment does not vary from that of the Hyacinth and other Dutch bulbs.

MYOSOTIS.

The Myosotis, or Forget-me-not, is an old plant, and a favorite when grown well. But, like many other meritorious plants, we do not meet with it in the garden as frequently as we ought to. Its delicate blue color—a color somewhat rare among summer flowers—ought to give it a place in every collection.

It is a hardy perennial, and the seed can be sown in fall with perfect safety. If sown then, the plants will come into bloom early in spring, when we have few other border flowers.

It likes considerable shade, and on that account can be used where many other flowers would not flourish. I like it best when grown in beds by itself. It does not grow to any great height,—generally from six to nine inches,—spreads considerably, and is a constant and profuse bloomer if kept somewhat moist. In exposed situations, during dry summers, I have never succeeded with it very satisfactorily. But given some shade, and water if a dry spell comes on, it will please every lover of real beauty. It is not a showy flower, but the flowers which make the most show are not always the best ones. The flowers are borne in clusters, are star-shaped, and have white and yellow eyes.

M. palustris has flowers of a clear, porcelain-blue. *M. azurea* has flowers of a lighter blue, and is a finer variety.

The finest variety is *dissitiflora*, because it is such an early bloomer. The flowers of this section are very rich in color,—quite as much so as *Salvia patens*,—which is one of our very best blue flowers. It comes into bloom very early in the season, and can be made extremely useful on that account, in beds where other and later blooming flowers would be of no use. Last season I had a

circular bed of it, edged with pale yellow Pansies. The effect was extremely fine as the two colors harmonized well, and were in strong contrast to each other. Both were in bloom in May; and as both like shade to a considerable extent, they grew well together.

The Myosotis is useful for furnishing flowers for bouquets, its clusters being borne on stems which can be cut of any desirable length. Cutting does it good, for new branches are encouraged to grow, and these soon produce flowers.

A fine effect could be produced by using the Myosotis as an edging to a bed of pink and white Phlox Drummondii. The three colors would harmonize perfectly, and at the same time afford sufficient contrast to each other. E. E. REXFORD.

THE SALVIA.

One of the very best flowers we have for use in the garden during the latter part of the season is the Salvia. It is a strong growing plant, with bright, clean foliage, bearing long spikes of very brilliant flowers. *Salvia splendens*, the old and well-known scarlet variety, is of a most vivid color. The only flower that can compare with it is the native Lobelia, or Cardinal Flower. Both are of a most intense color, and the Salvia takes the place in the garden which the other occupies in the wild-wood.

To grow it satisfactorily it must be started early, in the house, if possible; for if it does not come forward before cool weather sets in, it will not afford much pleasure, for it produces few flowers when small. At least such has been my experience with this flower. From plants set out in May, small plants, such as most florists send out, I have never had many flowers. The plants were generally full of buds when frost came. My plan has been to keep a plant over through the winter, in the house, and start new plants in March. These I keep growing as fast as consistent with health, until the weather becomes really warm. Then I put them out in light and mellow soil. I find the Salvia likes a rich soil, and one made light by the addition of considerable sand. Strong plants, set out in such a soil, when the weather becomes warm enough to keep them growing, will give flowers in profusion before frost. If set out too soon, they will be likely to receive a check from cold weather.

S. splendens is the most brilliant and dazzling variety. *S. patens* is a most exquisite blue. *S. marmorata nana* is a variegated kind, scarlet striped with white, very unique and showy, but not as desirable as either of the others.

The Salvia is a very desirable plant for use in the house during the winter. It blooms very profusely, and will afford the best of satisfaction in a mixed collection if you are careful to sprinkle it well, both on upper and under side of the leaves, two or three times a week, or oftener, to keep down the red spider, which is its worst enemy. So susceptible is it to the attacks of this pest, that the leaves soon turn yellow and fall off. I am greatly pleased with *S. Pitcherii*, a comparatively new variety. Its flowers are of a pale lavender blue, a color rarely met with except in the Agapanthus, Plumbago Capensis, and some of the Ageratums. It is a profuse bloomer, and the spider does not seem to like it as well as it does *S. splendens*. It is very useful in bouquets, as the color harmonizes so delightfully with pink, yellow, or white.

* *

BALSAMS.

I can remember away back years ago when my grandmother's garden used to have a frame show every summer of Lady's-slippers. I used to like them then because they were flowers, and because grandmother liked them; but I have a greater fondness for our Balsam of to-day, which has grown from the old Lady's-slippers, by the patient skill of florists, who really seem to perform miracles. The old kinds were single and small; the new kinds are double as Roses, and almost as large, and are most beautiful in color and variegation.

The Balsam is a tender plant, and the seeds should be started in the house, early in the season, though good results can be expected if the seeds are not planted until the season becomes warm enough to warrant planting the seeds in the ground. Balsams make very fine pot-plants for summer use. They like a deep, rich, mellow soil, with considerable sand in it. They like plenty of warmth, and should be given a sunny place in the garden.

The foliage is apt to grow so thick along the stems as to hide the flowers considerably. This can easily and rapidly be clipped off by using shears, and then the flowers will have a chance to display themselves to advantage. On well-grown specimens, the branches will be so thickly set with flowers as to resemble wreaths put together by hand. We have them in many colors, all very delicate and beautiful: some are striped like Carnations, some are spotted, and others are of distinct colors throughout. For bouquets they can only be used in shallow dishes, in sand. They are most profuse bloomers, and make a beautiful bed. They are very easily grown, and any amateur can feel confident of success in cultivating them. R. E.

PSEUDO-NARCISSUS.
N. POETICUS. N. INCOMPARABILIS.

POTTING CHRYSANTHEMUMS.

If you wish to bloom your Chrysanthemums in pots lift them during this month, preserving to them all the roots possible; put them into pots just large enough only to contain their roots, and use very rich, mellow earth. They will soon fill their pots in a root-bound state; then apply a surfacing of old rotted manure. Give them copious watering, two or three times a day, if they need it; never let them get dry. In lifting and potting Chrysanthemums or any other plants, it is well to observe that the greatest number possible of roots should be secured and saved.

In heavy, moist land, you may be able to lift your plants with balls of earth to them that you can pare down just to fit the pots into which you are to put them, and still your plants will wilt badly and lose their lower leaves. And why? Because in reducing the ball you cut off the feeding roots. It is the roots and not the earth you want. If the roots extend a yard, lift the whole mass, shake the loose soil away from them till you are satisfied you have reduced the mass enough to get it into the pot, then work in some fine mellow soil, and when finished, water copiously at the root and overhead. For some days, till the plants have recovered themselves, place them in a sheltered, somewhat shaded place, not very close together, and shower them overhead two or three times a day to keep them from wilting.

GROWING WATER-LILIES.

If any one will put a half barrel in the ground, writes W. M. Brown, and connect with the overflow of a rain-water barrel, and plant in six inches of rich soil a root of *Nymphæa odorata*, and leave alone entirely, my experience is that a rich reward of blooms will be the result. In cold countries a few planks over the top during winter will be necessary. Conscience compels me to mention musquitos as the thorn to this aquatic Rose, but then it can be put away from the dwelling.

The Window Garden
AND GREENHOUSE.

FREESIAS.

Few new plants have gained so rapidly in popular favor as these beautiful Cape bulbs. Two years ago they were hardly known by name even to any one except botanists; while now a collection of winter-flowering bulbs is not considered complete without several pots of Freesias.

The bulbs are rather small, and half a dozen may, therefore, be planted in a six-inch pot, covering them with about an inch of soil. A rich, sandy, potting soil, as is generally used for Hyacinths and other Dutch bulbs, is also used for these. For early winter blooming, they should be planted this month, and by making subsequent plantings at intervals of two or three weeks, blooming plants may be had all winter. At first they should be kept cool and moderately moist until the leaves appear, when they have to be removed to a sunny window or other warm and light place, and watered more copiously. After flowering, they should be dried off, and not started again till the following autumn.

The graceful form of the flowers, as well as their exquisite fragrance, makes them very desirable for the window-garden, and their remarkable keeping quality, after being cut, adds greatly to their value for florists' work.

AUTUMN WORK.

During the summer months our windows are destitute of plants, and only Ficuses, Palms, Cycads, Aspidistras, and others that we use to decorate our tables, sideboards, and halls, find room in our houses. Until October, plants are generally better out-of-doors than in the house. But we should be careful to preserve them from frost, by covering them over with newspaper, cotton sheets, or other material, if they are still unpotted and growing in beds. But if they have been potted, we can, on the eve of a frosty night, remove them to the piazza or under the trees or bushes, and thus protect them against injury.

We should now conclude what plants we mean to winter over in our windows, and act accordingly. We need young plants of Abutilons, Coleuses, Geraniums, Double Petunias, and others for next summer's garden; also Callas, Bouvardias, Carnations, and others to blossom in winter, and should have a place for both. But we should not try to keep more than our room will justify; better have a few good happy-appearing plants than a multitude so crammed together as to injure one another.

So long as the weather continues warm and genial, we should not mar our borders or beds by lifting those plants we wish merely to keep over for next summer's garden. But Bouvardias, Callas, Petunias, Sweet Alyssum, Heliotropes, and Begonias, that we require for furnishing flowers in winter, should be lifted early and become well established in their pots before cold weather sets in. Geraniums, Heliotropes, and many others may, after being lifted and potted, perfect the flower-buds then upon them; but, that done, they are not likely to bear any more till they have made fresh roots and started into fresh growth.

Tea-roses for winter and spring use had better be potted early and kept plunged out-of-doors in a sheltered place; if well rooted, a slight frost wont hurt them.

Tender plants, as Dracænas, Crotons, and especially those that have colored leaves, should be kept on the piazza, as cold, damp nights injure the tips of their leaves. Gloxinias, Achimenes, and Gesneras may be allowed to dry off preparatory to storing them part of the winter on a shelf in a warm, dry place. Musk may also be permitted to dry off before storing it in a cool place in the cellar; but it should not be kept dust dry.

CLUMP OF FREESIAS.

Madeira Vine, German and English Ivy, Cobœa, and similar vines, are pleasant in our windows in winter, and should be brought in readiness now. But if room is scarce for other plants, these vines can be dispensed with,—the Madeira Vine, like Potatoes, in the cellar, the English Ivy in a cool place there, too; the German Ivy, as a bunch of cuttings in a four-inch pot in the window; and the Cobœa thrown away — we can get it from seed next spring, plants that will grow twenty feet, and blossom from the end of July till killed by frost in October.

Chinese Primroses, Cinerarias, and Calceolarias love the cool, fall weather, and now start into vigorous growth. Keep them cool, well ventilated, and copiously watered, and scatter some tobacco trash on the top of the soil in their pots, as a preventive of green fly and thrips.

Geraniums, Show Pelargoniums, Coleuses, Iresines, Alternantheras, and other bedding plants that we wish for next year's garden, and cannot well raise from seed, should now be propagated from cuttings. Put six to ten in a four-inch pot, to stay there till next spring. A gentle hot-bed is an excellent place in which to root cuttings of tender plants at this season; but if in a moderately sheltered and shaded place, and they are kept somewhat moist all the time, cuttings will root freely without any artificial heat.

Yellow and red Oxalises should now be potted and allowed to start slowly into growth. All kinds of "Dutch" bulbs, as Hyacinths, Tulips, and Narcissus, may be potted as soon as received, and kept in a cool place, as in a shady frame, shed, or cellar floor, and covered over with a few inches deep of coal ashes, sand, earth, or other material to keep the bulbs moist and cool and allow them to fill their pots with roots before they send up leaves or flowers.

WM. FALCONER.

CACTUS.

The Cactus family comprises some of the most interesting objects in the vegetable world. Not only are its members peculiar in their form of growth, but some of the species produce flowers of remarkable beauty. They, as a general rule, are easily cultivated, requiring during their season of rest little or no care; although, like everything else, a little extra attention bestowed upon them is amply repaid with more and better flowers than when the careless manner is adopted.

Being incapable of rapid evaporation of moisture from the surface of the stems or leaves, but little water is necessary during their period of rest, which in most of the species extends during the greatest portion of the year, the growth being made in a short period. It is necessary to grow them in soil sufficiently porous to allow a rapid passage for the water. For the strong-growing kinds, such as Cereus, a soil composed of turfy, sandy loam and leaf-mold, thoroughly rotted, is most suitable, and about one-third of the pot should be filled with drainage. To throw a handful of potsherds at random in the pot, then the soil on the top, is not suitable for any kind of plants, more especially Cactuses and Orchids. Drainage should be well and carefully applied by placing regularly some large pieces in the bottom and smaller ones on top, then moss or some rough material over this, to prevent the soil from washing through, and thereby checking the flow of the water. A few pieces of broken pots or bricks mixed through the soil are also a benefit.

When potting the plant, do not cover up its stem with the soil, as when so placed it is apt to rot off just at the junction of the roots with the stem. After the plant is potted, place over the surface of the soil about a half-inch of clear sand, which prevents any decay of the plant and gives a cleaner appearance to it. When the growth approaches maturity, gradually withhold water to insure thorough ripening of the stems, as upon this depends the flowering of the plants.

Cereus is distinguished by its funnel-shaped flowers, having the long, numerous stamens attached to the base of the petals. Although comprising a great many species,

there are only a few suitable for general cultivation; the best of which are

C. MacDonaldiæ, a night-blooming species, the flowers of which are about a foot in diameter, red and orange sepals, with pure white petals. The stems are long and slender, a good kind for house or greenhouse culture.

C. grandiflorus is another beautiful night-blooming kind, having large creamy-white flowers, of free habit, and is easily grown.

C. Corderoyanus, a bright scarlet, on upright stems.

C. Gordonianus, a rose-colored kind, of easy culture.

C. crenatus, creamy-white, good form, and large-flowering.

C. Falcn, a splendid flower, crimson, shaded with violet and orange.

Echinocactus, the Hedge-hog Cactus, is a large globular genus, thickly set with spines. Mostly natives of Mexico, they require plenty of sun when growing and plenty of water, but should be kept dry when at rest.

Melocactus communis, Turk's-cap Cactus, a South American species, often seen in cultivation. It has a large cylindrical portion on the top of the plant, when the flowers are produced, of a bright red color, like a fez cap; hence the name. A good window plant.

Pilocereus senilis.—This is known under the name of Old Man Cactus, from its upright stem having a dense woolly head, looking like long white hair, flowing over the plant. As a curiosity for the window or greenhouse this is suitable. Keep in a sunny window at all times.

The genus *Epiphyllum* should not be forgotten in forming a collection of plants. Its free-flowering habit and beautifully colored flowers make the various species worthy of a place in every collection. Full directions for their culture, etc., were given in a previous number of THE AMERICAN GARDEN.

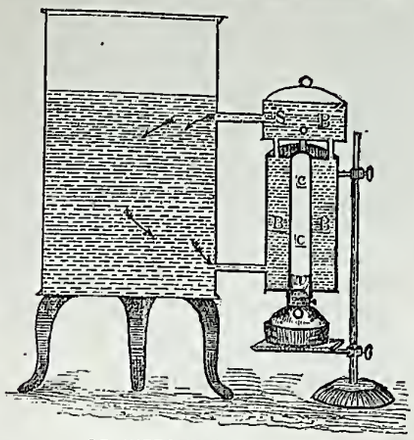
M. MILTON.

HEATING SMALL PLANT-HOUSES.

This subject is probably nearer to the heart of the amateur floriculturist than any other, and the difficulty of constructing a cheap, easily managed and regulated heating apparatus for small greenhouses or plant-rooms, deters a great many from cultivating house-plants, and thus making their rooms bright and cheerful during the winter months. Our esteemed friend, Dr. Edward Kittoe, of Galena, Ill., has constructed and used for several years an apparatus, which seems to answer its purpose better than anything else we have ever seen, and it is with much pleasure that we give the following descriptions, which he kindly furnishes for the benefit of the readers of THE AMERICAN GARDEN.

The heating apparatus proper consists of an ordinary oil lamp, marked O in our illustration; the chimney (C) is surrounded by the boiler (B); a supplementary boiler (S B), connected by three tubes with the main boiler, is placed above this, in order to utilize all the heat as far as is consistent with a due regard to the draft of the lamp. The boilers are connected with the main reservoir by two tubes, the upper one for the overflow of the hot water, and the lower for the return of the cooler portion to the boiler. In this case a ten-gallon tin oil can serves the purpose of a tank. Any common kerosene oil lamp may be used. A lamp holding one pint and a half of oil was found sufficient for heating a bay-window 8 x 12 feet during cold nights, when the fire in the stove in the adjoining room was burning low.

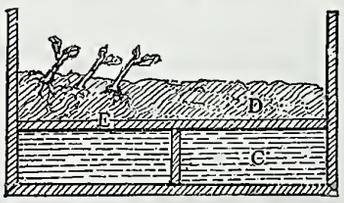
Our second illustration shows a vertical section of a propagating tank, heated by a



DR. KITTOE'S LAMP BOILER.

lamp of similar construction. C represents the water-tank, D the sand of the propagating bed, and E the cover of the tank. The tank used by the doctor is 9 x 2 feet and twelve inches deep. The boilers may be of copper or tin, and can easily be made by any good tinsmith.

The uses to which such an apparatus may be applied are not confined to plant-houses only. By connecting the boiler with a suit-



CROSS-SECTION OF PROPAGATING BENCH.

able set of pipes it might serve an excellent purpose for heating an incubator, and for keeping frost out of cellars during extreme cold it seems admirably adapted. The great advantage of this contrivance over ordinary oil-stoves, in addition to its economy and simplicity, is that the lamp boiler may be so partitioned off from the plant-room that all danger from smoke and gases may be avoided.

PREPARING FOR WINTER FLOWERS.

With the waning summer heat and the approach of autumnal frosts comes the work of preparation of the winter flowering plants; for if good bloom and healthy leaves are wanted, the plants must be properly prepared for the purpose. Stove heat in a room where flowers are kept, especially when constantly maintained at a high degree, is one of the greatest hindrances to winter flowering.

The finest plants I saw last winter were placed in pots and window boxes, in a bay-window on the south side of a house. The curtain dropped from the top to the floor; there were no blinds, the curtains were constantly down in the day-time and raised at night; a flood of light reached the plants from all the sashes, which were often opened in mild weather from the top, while the room was heated by sunlight or an occasional wood fire in the small, open fire-place; but in mild weather the room was kept comfortable for sewing and reading by heat from adjoining rooms.

It will be seen that the conditions were perfect for abundance of sunlight from the windows and change of air through the windows and fire-place. Any one who can provide the above conditions may have summer thrift in winter plants. In regard to preparing the few plants needed for such a display I will give a method which, with me, gives good success.

Petunias slipped now will make thrifty young plants to pot for fall and winter bloom, especially the double white, pink, and crimson; these, with the fringed, make a good assortment.

The Scarlet and Lady Washington Geraniums, slipped in common earth now, will produce fine bloom in early spring, while the old plants, if lifted early, will recover in season to bloom during winter.

Heliotropes lifted, cut back, and the slips rooted in sand or earth, will bloom all winter. A knife run deeply around a plant some time before lifting will prevent its wilting too much, and will often obviate the necessity of cutting it back.

Carnations cut back will recover to bloom in midwinter and spring, while the slips set this spring in the open ground or plunged in pots will be full of vigor, and bloom in early fall and winter.

Callas, divided and set in the open ground in spring, will first die down, but afterward make a vigorous growth, and when taken up and potted again in the fall will recover and bloom in early winter, and if kept cool for a while in a light cellar, may be retarded till Easter.

Roses carefully tended in pots in summer in the open ground, cut back and kept at rest during early winter, bloom in the spring.

Nasturtium, Ivies, and other plants for hanging baskets and vases should be well started early in the fall, so as to produce a good effect as soon as placed in the house for winter decoration.

The plants mentioned are common, within the reach of all, and when well managed give great satisfaction in perfume, bloom, and color, all winter. My experience is that a mass of roots in healthy condition, in a rather scant amount of earth, if properly watered gives the best bloom. The soil I use is compost from my hot-beds; this is rich in decayed animal manure, well mixed with the original soil by several years of use.

The nearest approach to it in a manufactured soil, so to say, if such compost could not be obtained, would be rotted sods or leaf-mold mixed with some naturally rich soil; and a small proportion of commercial fertilizer such as is sold in the stores as plant food; prepare it by mixing as long as possible before using.

W. H. BULL.

WATERING PLANTS.

Plants may be watered at any hour of the day, except when the sun is shining on the pot, or has just left it; for the earth gets hot when the sun shines on it, and then, if cold water is poured on it, it will cool off too rapidly. The best time for watering flowers in summer is the evening, and in winter noon is best. Rain water or brook water is always preferable to well water.

Lawn and Landscape.

PRUNING LAWN AND FOREST TREES.

TIME TO PRUNE.

This is a subject which has been frequently discussed among arboriculturists and all who cultivate trees of any kind; but all will agree that it should never be done at a time when the sap will flow from the wound, as this not only causes a loss to the tree, but the slowly oozing sap has a corrosive action on both the exposed wound and surrounding bark, often hastening decay. This is especially true with trees like the Maple, Butternut, and Birch, which bleed (as it is termed) if wounded at any time during the latter part of winter or early spring. The oozing sap also attracts certain insects, especially those that infest dying or dead wood.

In my own experience I have never found any better time to prune than in summer, as soon as the trees are in full leaf, and have commenced to make a new growth. The wounds made at this time will commence to heal over immediately, and, when small branches are removed on rapidly growing trees, the wounds will usually be entirely covered with new wood by the end of the season; and where larger branches are cut off, the exposed wood will become well seasoned, and so hardened during the warm weather that it will seldom commence to decay before it is entirely overgrown.

The next best season is in the fall, after the wood is ripe; for in cool climates the exposed wood will become dry and hardened before the sap commences to flow in spring.

PRUNING EVERGREENS.

The Conifers and other evergreens will submit to the knife and pruning saw as well as deciduous trees, and when raised for timber will need pruning as often and in about the same manner. When raised for ornamental purposes, the pruning will be mainly for the purpose of giving them the required form, although thinning out and shortening the branches at the time of transplanting is as beneficial as it is with deciduous trees; but it is not so generally practiced. Evergreens may be headed back or trimmed up, in order to make them grow tall and slender or broad and stocky.

With the natural conical-shaped evergreens, like the Spruces or Balsams, many persons dislike to cut the leading shoots, for fear of destroying the natural symmetry of the tree; and while it may have this effect for a short time, a new leader is certain to come in and take the place of the one removed, but during the time intervening, the lateral branches will spread out more vigorously, giving to the tree a more stocky appearance.

In pruning the coarser-growing Pines, a little more care is required than with Arborvitæ, Spruces, and other closely allied trees, for the reason that buds are not usually produced on the internodes between the nodes and joints; and when a leading shoot, either the terminal one on the main stem or branches, is removed, it should be cut out close down to the junction of the next tier of branches below, leaving no barren stump to die and decay. A glance at a Pine-tree will be enough for even a novice in such matters, to see how it should be pruned in order to make it grow more compact and stocky, if such a change is desired.

IMPLEMENTS USED IN PRUNING.

The common pruning-knife is the best implement for pruning small trees, but in removing large branches, a fine-tooth saw should be used in preference to an ax. If the wounds made are so large that they will not soon be covered with a new growth, it is well to apply some kind of wax, paint, or some other substance, to exclude water and prevent decay. Various compositions are used for this purpose, and on small trees, where the exposed wood can be readily reached, a little melted grafting-wax, applied with a brush, will be found an excellent preservative, but on large trees, where there is considerable surface to be covered, almost any good mineral paint mixed with linseed oil will answer every purpose.—*From A. S. Fuller's Practical Forestry.*

AUTUMN PLANTING.

If due regard be paid to the nature and requirements of trees and shrubs, says *Donald McDonald*, in *The Practical Gardener*, it will be readily seen that the autumn or fall of the year, when all deciduous kinds have shed their leaves, is the most appropriate period for transplanting; while evergreens will succeed better if moved earlier, in order that the warmer soil may assist the roots to become more quickly established in their new abode, and thus sustain a little renewed vigor before the severity of winter is felt. The benefit of this will be seen in the following spring, as soon as that season allows of an active growth to develop.

To insure the best results, it is necessary that the ground should have been previously well drained,—a very important feature in shrubberies particularly,—as a wet position or sodden soil will destroy the healthiest specimens.

Taste and arrangement are features that should be actively displayed, as, without them, very little precision and judgment can be employed, and an unsightly appearance will be the result.

Discretion must be used both in taking up the trees and in planting them. When a tree is taken out of the ground for transplanting, it is certain that its roots are more or less temporarily injured; care must, therefore, be exercised, that all jagged and injured portions be neatly cut off, and that the hole is sufficiently large to admit the roots without further injury, such as cramping and twisting. In the case of shrubs, balls of earth should be secured, if possible, and the fibrous rootlets will soon push their way in the new soil; but with many kinds of trees that possess roots not so compact, a capital method of keeping them in as natural a position as possible, is to lightly scatter a few spadefuls of earth from the stem outward before the remainder of the soil is thrown in and trampled down.

In planting a clump or bed, tall and strong-growing kinds should always be placed in the background or center, as the case may require. Avoid planting too thickly or too deep; both faults frequently occurring in the amateur's garden. Always keep the stem in an upright position, as nothing looks more unsightly than a newly planted tree lying over in a slanting position. If the stem is weak, a stake should be used; but larger trees can be secured by attaching stout wires to their heads and securing them to pegs firmly driven into the ground a few feet from the stem. Three or four of these wires will keep a large tree firm and upright; but hay or other bandages must be used to prevent the wires from injuring the bark. This also applies to trees that are planted in positions much exposed to the wind. The stake should always be placed at the back of the tree. Do not allow the branches of one tree or shrub to touch those of its neighbor. On no account leave a mound of earth round the stem, as it not only gives an unfinished appearance, but is detrimental to the health of the tree; it assists to harbor vermin of all kinds, and prevents the rain from entering the soil.

To relieve any excessive bareness that may for the time exist between the trees and shrubs, Lilies, Dahlias, or Hollyhocks, if plentifully introduced, will be found useful, as the leaves of newly planted shrubs are seldom brought to perfection during the first year.

A note of importance that cannot fail to be of value to the amateur planter is the process generally adopted, after planting, of deluging the roots with a copious supply of water, especially if the ground is dry. This is particularly essential in the case of large evergreens. Mulching of the soil is also useful for retaining moisture, and syringing frequently prevents any serious drooping of the foliage.

TREE-PLANTING SOCIETIES.

The city of Brooklyn has an association that ought to be encouraged, the "Tree-planting and Fountain Society." Its object is to promote the planting of trees and the erection of drinking-fountains. Lectures are to be given on the subject of tree-planting, and to instruct the people as to the dangers that are incurred in permitting the forests of the state to be recklessly despoiled. The chief object of the society, however, is to beautify the city of Brooklyn by increasing its foliage. That is a worthy purpose, and one that can be advantageously carried out in a city of homes like Brooklyn.

The absence of all foliage from the streets of large cities is a great drawback to them in summer. Of course, in narrow streets trees are not desirable; but in the wide avenues of the newer parts of cities, which are chiefly occupied for residences, nothing imparts so much character of refinement and repose as graceful foliage of well-grown trees.

OUR PARKS AS EDUCATORS.

Few people can realize, said Central Park Commissioner Gen. Viele, that the public parks are great educational institutions. They elevate and refine the people. They affect not merely their bodies, but their minds and hearts as well. Take away the public parks, and New-York would become uninhabitable. Take them away, and we should have a riot here in a very short time. They are the cheapest moral institution in the city, for they save millions of dollars which would otherwise be spent in criminal courts and penal institutions.

Foreign Gardening.

SCHOOL GARDENS IN AUSTRIA.

The German word *Kindergarten*, as well as the method of instructing quite young children associated with it, is already tolerably familiar in this country. Briefly, it is an institution to assist in and complete the bringing up of children who are yet too young (three to six years of age) for regular school duties. True, it may include among its devices a tiny garden to promote observation and industry in its infant wards; but the school garden, as understood in Austria, is a real garden attached to a school, and forming part of the school. In an article, entitled "Der gegenwärtige Stand der Sache des Schulgartens," Mr. E. Schwab gives to the *Neue Freie Presse*, as reported by the *Gardener's Chronicle*, his ideas on the uses and scope of the school garden.

This is an institution of Austrian origin, and it is rapidly extending from country to country of that large empire. Thus in a small province 245 schools have gardens attached, thirty-six of which are worthy of notice. Moravia and Bohemia are active in the movement, and Gallicia already possesses a considerable number in some of the provinces. The provinces of Mielec and Jaroslav are dotted all over with school gardens, each one including a neat little ornamental garden. In Styermark a great many have been formed through the exertions of the Agricultural Society. In the capital little has yet been done in the matter, but they are established wherever the requisite space can be obtained. Seeds are supplied from the national botanic gardens, and suitable plans are furnished to any parish wishing to introduce the system.

The writer deprecates the plan of making simply useful gardens, and would have them include recreation grounds as well as ornamental features. In fact, with due regard to economy, the garden should be laid out with discernment and taste, in order to instill into the minds of the young scholars a sense of the beautiful. If instituted simply for the purpose of inculcating early habits of industry, it would doubtless prove a failure. Of course the design and arrangement should always be made subordinate to local conditions and circumstances.

Thus in a large town the requirements and the space generally available are usually widely diverse from those obtainable in a small country town. But even under the most unfavorable circumstances, the indigenous vegetation of the district should be illustrated, as well as the cultivated cereals, fodder plants, aromatic and medicinal herbs, vegetables and herbs employed in cookery, and fruits of all kinds. The poisonous plants, particularly of the neighborhood, should be cultivated in order to make them familiar to the scholars. Ornamental shrubs and herbaceous plants also deserve attention where there is room for them, and in larger gardens representatives of the native forest trees should be placed for shade on the playground.

The knowledge gained by children in this practical manner—and in a well-conducted garden it is varied and valuable—is permanent; they may forget what they learn, but not what they experience. One of the principal advantages of this system, besides affording pure and healthy occupation and pleasure, is that under proper tuition it induces habits of observation and independent thought. Again, in towns it keeps children both from the evil influences of the streets, or those more inclined for study from shutting themselves up too closely instead of taking healthy exercise.

Where a garden is absolutely impossible, as in some towns, growing plants in pots in the yards and windows is recommended. There are doubtless almost insurmountable difficulties in the way of carrying the school garden into practice in many places in this country; but the need of some such purifying influence is painfully evident to those who come in contact with boys and girls whose only play-ground is the street.

DRYING TOMATOES.

In Italy an extensive business is carried on in drying Tomatoes to use during those portions of the year when the fresh fruit cannot be obtained. According to the *Rural Record*, Tomatoes are raised, for the most part, between rows of Grape-vines, so that the land of their culture costs nothing. Sometimes the Tomato-vines are trained on the lower bars of a trellis, to which the Grapes are attached. The Tomatoes are allowed to remain on the branches until they are quite ripe, when they are picked and pressed in bags made of coarse cloth, which allows the pulp to pass through, but which retains the seeds and skins. The pulp is then thinly spread out on cloth, boards, or in shallow dishes, and exposed to the sun to dry. When it has become quite dry, it is broken up fine, or ground, and put into boxes or bags and sent to market.

A large part of it is used for making soups, but considerable of it is employed as we do Tomatoes that are preserved in tin or glass cans. It is soaked for a few hours in warm water, and then cooked in the ordinary manner. Large quantities are wanted for home consumption, and considerable is exported.

This would seem to be a profitable industry to engage in in this country. There is great prejudice against canned Tomatoes, as many of them are unwholesome. The acid juice they contain unites with the solder of the tin cans and forms a compound that often causes severe sickness. The pulp of Tomatoes could be dried to good advantage in any of the styles of apparatus employed for drying Apples, Peaches, and small fruits.

MY BERMUDA PUMPKIN-VINE.

When I say that my Pumpkin-vine is seventy years old, and that I could make it grow in one continuous line from one end of the island to the other (twenty-four miles), I am stating a fact which would seem rather "fishy" to people living in a climate where the average life of a Pumpkin-vine is about five months. I found my vine running over my garden when I took possession of my place, and my colored gardener, who had lived on the place, boy and man, bond and free, for over seventy years, said the vine had been there as long back as he could remember, and that it was a valuable kind.

The only "hitch" in my story is that the vine is not a Pumpkin-vine at all, but a hybrid Squash, which, in its many years of existence in a tropical climate, has formed the habit of sending out roots at each joint, so that as it advances in its growth it dies away behind after having perfected Pumpkins. I allow the vine to grow over a share of my garden during the summer months; and as September approaches, when I want the garden for my winter vegetables, I turn one end of the vine toward the border, and carefully conduct its growth to the fence and through into the pasture beyond, where it takes care of itself during the winter. I then gather the Pumpkins from the garden, store them away in a dry place,—where they will keep six months or more,—spade up the garden, and plant other vegetables.

The vine will not fruit in the winter months, as the temperature is too low (down in the sixties); but when the warmer days of April come to us, and the vegetables in the garden begin to fail me, I turn the vine which has wintered in the pasture back toward the garden, and as soon as it touches rich, freshly spaded earth, you can almost see it grow, and in a few weeks the garden is covered again. The seeds of this Pumpkin will grow and keep up the habits of the parent; but I have always found the seedlings do not produce as good fruit as the old vine, so I stick to the old love. The Squashes of the North do well, especially the Hubbard and Perfect Gem; but I have to plant seeds each year, as the vine dies in August.—*Russell Hastings, in N. Y. Tribune.*

A FAMOUS ROSE-BUSH.

The celebrated Rose-bush of Hildesheim, in Germany, which is said to be a thousand years old, and is reputed to have been planted by Charlemagne, has this year been covered with an extraordinary profusion of blossoms—more, it is declared, than it was ever known to bear before. New shoots have been grafted on its stems within a few years, and have grown finely. The bush stands on the outer wall of the crypt of the cathedral, with branches reaching to more than thirty feet in breadth and nearly thirty-five feet in height.

ORCHID CULTURE IN ENGLAND.

The following three cardinal points are considered by *Mr. Lucien Linden* as the most important requisites in Orchid culture:

First. The use of rain water.

Second. The employment of shading only when the sun burns, and then the light should be allowed to fall through open canvas netting.

Third. Abundance of air, even in frosty weather, when the ventilators should be opened and heat raised in proportion.

BLUE GUM-TREES IN IRELAND.

Blue Gum-trees, *Eucalyptus globulus*, have been growing for thirteen years on the estate of Lord Maurice Fitzgerald at Johnstown Castle, Co. Wexford. They had attained a height of sixty feet when they were killed by the recent hard winters. They can therefore not be considered hardy in that isle.

Rural Life.

HOMES IN THE COUNTRY.

The tendency of our steadily increasing population, especially in the East, is more and more toward the already crowded towns and cities, rather than toward a fuller occupation of what Dr. Holmes calls the unpaved districts, and this notwithstanding the fact that according to modern and popular standards of progress and culture there has been relatively far greater improvement in country than in city life during the past fifty years.

The opportunities for social intercourse, for keeping abreast of the times, for the best intellectual training, for all the minor comforts and conveniences of daily domestic life fifty years ago, were scarcely inferior to what they are at present.

The market was across the way for those who chose to live near it, and the bakery was around the corner; the huckster cried aloud in the streets and the organ-grinders dispensed the most catching operatic airs under the window. The concert-room, the lecture-hall, and play-house were within easy reach, and although sectarian lines were drawn with more or less rigor, there was a great variety of churches from which to choose. The latest fashions in dress were displayed in the shop windows, and the latest news from the seat of government or the seat of war was disseminated in a few hours after its arrival within the city limits; water and gas flowed freely, and the saloons and the police stations were all too familiar; livery stables abounded and picnic excursions were not unknown.

These and kindred privileges and blessings were confined more strictly to the city in former years than at present, and country dwellers obtained their knowledge of the outside world—that is, of the world that lay beyond "the visual line that girt them round"—by proxy. They must learn of its works and ways, its fashions, follies, and crimes, its opinions, its tricks and its manners, through some favored or enterprising member of society who had gone forth to see and explore. Now a few hours' time and a few dollars' outlay will enable each one to make his own explorations. There is not a remote corner grocery that may not have the news from Washington or London as promptly as the President or the Queen; not a farmer, fisherman, or mechanic who may not know the current price of his product or his labor; not a maiden among the Green Mountains of Vermont or the savannas of Georgia who may not for sixpence have the latest fashions, samples and all, direct from Stewart's or White's.

It will doubtless be a long time before the country will be as attractive to the majority of men as life in town; but as its advantages grow more and more apparent and its disadvantages diminish, as the country grows more beautiful and productive, owing to thorough, scientific cultivation, it will be strange if rural homes do not come to be reckoned more and more desirable. Of these there are two distinct types, the most common at the present time being those which are built and maintained from without, which are in effect suburban homes, although they may be a primitive Sabbath day's journey from any large town or city, and they are not dependent for their essential comforts and conveniences upon the soil on which they stand.

Country homes of this sort are doubtless increasing as the ways and means of getting back and forth from them to the centers of trade are made more swift and certain. But the other sort, the agricultural homes, or those that are fed and maintained in some way by what can be drawn from the earth itself, do not thrive to a great extent in the East. The opinion that the farmer's life in New England is one of unremitting and almost unrequited toil and privation for himself, his wife, and his children, for his men-servants and maid-servants, his cattle and oxen, still prevails in spite of high prices, good markets, and the great advance in agricultural knowledge and facilities for doing work.

Doubtless, common sense will ultimately prevail. Every recurring period of hard times throws more or less men back to the first principle of earning a living by the sweat of their brows, and every demonstration of the wisdom and profit of strictly scientific farming attracts still others to this most ancient and honorable calling,—ancient surely, but honorable only as it is intelligently followed.—*The Builder.*

Exhibitions & Societies.

GLADIOLUS EXHIBITIONS.

Private Flower Exhibitions are steadily increasing in New-York City, and being held down-town in the most frequented business quarters of the city, are visited by many persons who could not, or imagine they could not, afford the time to attend the monthly exhibitions of the Horticultural Society. The exhibitions of P. Henderson & Co. and Young & Elliott were unusually fine, and many visitors had, no doubt, never before seen such a display; yet both of these were excelled by that of B. K. Bliss & Sons. *The New-York Tribune* says of it:

"A stream of visitors kept passing in and out of the warehouse of B. K. Bliss & Sons, 34 Barclay St., yesterday. Business men, walking by, were attracted by the perfume of flowers, and willingly accepted the invitation posted on the door to step in and view a floral exhibition. No expense has been spared to make the collection of flowers as complete as possible, and as the climatic conditions have for the past two or three months been exceptionally favorable, the exhibition is one of the best that New-York has seen. It includes many varieties seen in this country for the first time. A large bunch of white Tigridias, placed between the red and yellow varieties, attracted much attention, and the collection of Hybrid Gladiolus is the largest and best in the country, embracing many new and rare varieties."

The collection of Gladiolus comprised all the choicest new varieties, most notable among which were:

Baroness Burdett Coutts with flowers and spikes of the largest size; delicate rosy-lilac striped with purple.

Marie Berger, rose, carmine-flushed, shading into yellowish-rose; spikes very compact and closely set, more so than in any other variety we are familiar with.

Sea Foam, nearly pure white, probably the best white variety.

Africaine, of very peculiar slaty-brown color with white throat.

Leander, very large flowers, deep lilac shading into lilac, large, white throat.

Camelion, flowers very large, of peculiar grayish lilac color, with cream-colored throat.

Dalila, deep, cherry-rose, large.

Lesseps, immense spikes, rose, deep carmine striped.

The Blonde, an entirely new shade of buff and salmon pink, almost blonde.

Aurora, a very large compact spike, a very peculiar salmon-rose shaded orange and white striped.

Corinne, amaranth, shading to cherry.

Flamboyant, brilliant, flame red.

To name all the older and better known kinds would far exceed the space at our disposal. Among the hardy species and varieties were:

G. purpureo-auratus, Froebeli, Lemoinii, cardinalis, John Thorp, and many others. The last named is remarkable for its regular shape. Although Gladiolusses were the leading feature of the exhibition, the fine collections of Lilies, Tigridias, Dahlias, Phloxes, magnificent specimens of *Hyacinthus candicans, Eulalia zebrina* were not less attractive and admired by the many hundreds of visitors. The beneficial influence of such exhibitions cannot be overestimated, and it is to be hoped that our seedsmen and florists will find it to their advantage to hold similar special exhibitions of the leading classes of flowers.

NEIGHBORHOOD EXHIBITIONS.

Not far from this place, in an enterprising little village, the plan has been conceived of holding, at stated times, an exhibition of fruits, plants, and flowers by the young people. Small premiums are awarded to successful competitors, and a real genuine interest in the exhibitions is manifested. If a sufficient number of villages could be united in such a plan, and once a year have a general exhibit, good results could not fail to accrue.

By this means a love for flowers and their cultivation is established; and how rapidly this love grows when one is every day with them, watching and caring for them! It is a good thing to train young minds in the love of nature.

Moreover, by such exhibitions, where all the plants and fruits are carefully labeled, it makes it comparatively easy for our boys and girls to familiarize themselves with the correct names of the same. How many children (I will not say adults) can distinguish by their names a tenth part of the different varieties of Strawberries, Cherries, Pears, or Apples, and likewise the varied flowers about them in the fields, or, mayhap, in their gardens? To fasten those names indelibly upon the memory would be one object of these exhibitions. Then we should soon see a change about many a new unattractive yard, and in place of barren and unfruitful grounds we might hope to see flowers blooming and fruits growing, and with them an unconscious love in our own hearts for the beautiful in nature, expanding day by day.

J. W. DARROW.

Household Pets.

TAME ALLIGATORS.

In the sixth paper of Dr. Henshall's "Trip Around the Coast of Florida," he speaks of "Alligator Furgesson," who, in one of his yarns, remarks that he never killed a 'gator that measured over twelve feet in length. I would like to ask the reader what was the longest alligator known to have been killed?

I have three small tame alligators, which have been about a year in my possession. They are three feet long, and have grown six inches in that time. They are quite tame, and will come eagerly hustling along when I commence tapping on their box or calling them to feed. They are more spry than I would suppose possible. I have held a piece of meat over their box and have seen them jump so that their heads would appear above the box two feet high trying to get it. Putting one on the ground so as to give him a chance to run away, I have been surprised into a very fast walk to catch him again. When I stand and talk to them awhile they will rise on their feet, keep up a constant hissing and whisking of tails, as if they like to be noticed and talked to. Altogether they show more brightness and intelligence than I thought the species had.

I feed a little fresh meat twice a week in summer; in winter none at all, as they will not eat. At least these do not. Last winter I have several times found them frozen fast in the ice when the water was low in the tank. If large ones are correspondingly as quick and fierce as these little fellows, I should not care to be taken by one. Putting a small piece of meat on the end of a stick, I have several times had the stick twisted forcibly out of my fingers. They have a way of rapidly rolling over and over when they bite anything, until the piece is twisted out.

The little swamps had been dry so long that the water was all gone except in the alligator holes. I saw something swimming about in a little pool about six feet in diameter. I sat down on the sand bar thrown up around the hole, which had probably been there for years, the work of the alligator when digging the hole. Soon the nubby nose and little green eyes of a young alligator popped up; then another, until I counted six or eight. I was not more than four feet from the water, but, as I kept still, the little fellows did nothing but eye me sharply. Pretty soon I heard a strange clucking sound, and a big bunch of a nose and a pair of huge green goggle eyes were thrust up a little too close and familiar, I thought, considering the short acquaintance. I sat quite limber on foot, ready to take leave in case the old lady should harbor a notion to scoop me into the family circle. The stare of sixteen or eighteen eyes was embarrassing, as my audience seemed to expect something from me. Cautiously I backed down and out, and the audience suddenly and silently disappeared. I tried to snare the old one, but she pulled out of the noose I fixed, and was not at home for callers for several weeks. By fixing a sack under water and pulling a string, I closed the hole behind three of the little ones, which are the pets I now have; three feet each.

"KNICK," *in Forest and Stream.*

Miscellaneous.

THIS LIFE IS WHAT WE MAKE IT.

Let's oft'ner talk of noble deeds,
And rarer of the bad ones,
And sing about our happy days,
And not about the sad ones.
We are not made to fret and sigh,
And when grief sleeps to wake it,
Bright happiness is standing by—
This life is what we make it.

Let's find the sunny side of men,
Or be believers in it;
A light there is in every soul
That takes the pains to win it.
Oh! there's a slumbering good in all,
And we perchance may wake it;
Our hands contain the magic wand;
This life is what we make it.

Then here's to those whose loving hearts
Shed light and joy about them!
Thanks be to them for countless gems
We ne'er would know without them.
Oh! this should be a happy world
To all who may partake it;
The fault's our own if it is not—
This life is what we make it.

GROWING PLANTS IN MOSS.

Plants grown in moss have lately attracted considerable attention, and a special preparation, for which a Frenchman, named Dumesnil, has obtained a patent, has been extensively sold here as a wonderful discovery. This prompts *Mr. A. S. Fuller* to the following pertinent remarks:

"As we do not know the date of M. Dumesnil's patent, we cannot say whether he was first in the field or not; but we do know that Mr. Alfred Chamberlain, of Newport, R. I., obtained a patent for growing plants in baskets of moss, and a fertilizer, nearly or quite twenty-four years ago, and while visiting Washington with a specimen of his work, in 1861, he presented a handsome basket of Grapes growing in a wire basket to Mrs. President Lincoln. Mr. Chamberlain afterward exhibited various kinds of fruits raised in the same manner; even Peach-trees laden with ripe fruit were exhibited at horticultural fairs in New-York and Brooklyn. It is rather strange how soon a man and his works are forgotten; at least men will pretend to forget them when it is for their interests to do so.

"There must be, at this moment, hundreds of persons in this city and Brooklyn who remember the exhibitions of Mr. Chamberlain's fruits grown in moss-filled baskets, and the illustrations of them that appeared in the horticultural journals at that time; but, for some reason, none of his old contemporaries and competitors have seen fit to refer to them during the recent revival of this system of growing house-plants."

HAWAIIAN FLOWER-GIRLS.

The Hawaiians are passionately fond of flowers. Bevies of happy, rollicking native girls climb the sides of the mountains or explore the picturesque gorges in search of the choicest specimens, and, having gathered enough to supply the market for the day, they dash down to Honolulu, riding horseback, man-fashion, at a terrible gait. They are sure to bedeck themselves first with "leis," or wreaths of flowers, which encircle their foreheads and hang suspended from their necks like so many necklaces glittering in the sunlight. Suspended from the neck, also, and flowing down their backs are great streamers of "maile" wreaths, plucked from a deliciously fragrant and perpetually green plant, without the aid of which no Hawaiian belle is robed in the height of fashion. Arriving in town the flower-girls select some shady nook along the public streets, sitting by the half-dozen or more, dexterously assorting the flowers, and making "leis" with great rapidity, and spreading them out fantastically, so as to attract attention and invite the public to patronize them by its most Platonic form, and their love-chants are usually successful in drawing custom. At the time that the famous Count Rochefort went through the Hawaiian capital, he was, while walking along, literally covered with wreaths by a charming native beauty.

THE WORLD SUPPLY OF AMBER.

This appears to be inexhaustible. The "blue earth" of Samland—the most important source of the supply—extends along the Baltic for sixty miles, and possesses a breadth of about twelve miles and an average thickness of ten feet. Runge estimates that every twelve cubic feet of this earth contains a pound of amber. This gives a total of some 9,600,000,000 pounds, which at the present rate of quarrying is sufficient to last for thirty thousand years. Amber is the fossilized gum of trees of past ages; and on the supposition that these trees had the same resin-producing capacity as the Norway Spruce, and that the amber was produced in the spot where it is found, Gœppert and Menge, in a new German work, estimate that three hundred forest generations of one hundred and twenty years each must have grown on the Samland blue earth to give it its present richness in this product. It is much more probable, however, that the amber came from a large area, and has been collected in its present position by the action of water. It is also probable that the trees were more resinous than the Norway Spruce. — *The Continent.*

FRIENDLY WORDS.

I find THE AMERICAN GARDEN a valuable guide for the garden.— *G. B., Richmond, Utah.*

Your AMERICAN GARDEN is so excellent, I wish all my friends to read it.— *E. D. F., Belair, Md.*

THE AMERICAN GARDEN is a handsome and admirable paper.— *E. C. P., Berkeley, Cal.*

I prize your paper very highly, and miss its timely suggestions when it does not come.— *G. R. L., Portsmouth, N. H.*

THE AMERICAN GARDEN, excellent as it is, improves constantly.— *W. C. (F. R. H. S.), Wantage, England.*

THE AMERICAN GARDEN is the best paper I ever saw, and I consider myself well repaid even without premiums.— *E. P. B., Shelbyville, Ky.*

Let me congratulate you on THE AMERICAN GARDEN; it grows better and better.— *E. S. R., Para, Brazil.*

THE AMERICAN GARDEN is so valuable a publication it should repay well all concerned.— *J. W. C., Brisham, Queensland, Australia.*

THE BANYAN-TREE.

(Ficus Indica.)

One of the most remarkable trees belonging to the genus *Ficus*—the six hundred species of which comprise climbing shrubs and trees of great diversity of character—is the famous Banyan, whose extraordinary habit of growth and enormous proportions so much astonish those whose idea of a large tree has been formed from what we consider giant forest trees. The Banyan, whose spreading, bowery roof, beneath which whole villages of huts find shade and shelter, is supported by gigantic pillar-like props, formed by descending aërial roots, which, on reaching the ground, assume the appearance and perform the functions of separate trunks.

The following extract from Tennant's "Ceylon" gives an interesting account of the peculiar habits of this tree, which in many parts of India is held sacred by the natives:

"As we ascend the hills, the Banyans, a variety of figs, make their appearance. They are the Thugs of the vegetable world; for, although not necessarily epiphytic, it may be said that, in point of fact, no single tree comes to perfection, or acquires even partial development, without the destruction of some other on which to fix itself as its supporter.

"The family generally make their appearance as slender roots, hanging from the crown or trunk of some other tree, generally a Palm, among the moist bases of whose leaves the seed, carried thither by some bird which had fed upon the fig, begins to germinate. This root, branching as it descends, envelops the trunk of the supporting tree with a net-work of wood, and at length, penetrating the ground, attains the dimensions of a stem; but, unlike a stem, it throws out no buds, leaves, or flowers. The true stem, with its branches, its foliage, and fruit springing upward from the crown of the tree, whence the root is seen descending, and from it issue the pendulous rootlets, which on reaching the earth fix themselves firmly and form the marvelous growth for which the Banyan is so celebrated. In the depth of this grove the original tree is incarcerated, till, literally strangled by the folds and weight of its resistless companion, it dies, and leaves the Fig in undisturbed possession of its place.

"It is not unusual to find a Fig-tree in the forest which had been thus upborne till it became a standard, now forming a hollow cylinder, the center of which was once filled by the sustaining tree, but the empty walls form a circular net-work of interlaced roots and branches firmly agglutinating under pressure, and admitting the light through interstices that look like loop-holes in a turret."

Deep twilight always prevails under the shade of the spreading foliage, through which not a ray of bright light can pierce, and the awe and dread with which the Buddhist villages regard this sacred tree is very intelligible. In the Wood Museum, at Kew, there is a fine specimen of a Palm trunk, upon which the strangling growth of a Banyan's roots is well shown. The remarkable way in which the roots become united to each other at every point where they touch is observable in the specimen just named.—*Scientific American.*

CURAÇOA.

Consul Barnes has written an interesting article from Curaçoa, which we find in the *Grocer and Canner*, in regard to that tropical island paradise:

"Curaçoa, the island containing the capital of the Dutch West Indies, is the largest of the islands, its length from north-west to south-east being thirty-six miles, its breadth about eight miles, and its area one hundred and sixty-four square miles. At no time is there sufficient forage produced to keep the animals in condition, because of the dry climate, and the forage is not such as to make the animals tempting food for the table. There are but two small streams in the island of Curaçoa, one issuing from a cave upon a plantation by the sea-side, and only sufficient for its use, and one, also small, issuing from the hills in the north-west and unoccupied end of the island. A rainy day is a meteorological phenomenon.

"The fruit product of Curaçoa shows much diversity, and in favorable locations in many varieties it is nearly perfection. The fruits can generally be depended upon for steady crops. The principal fruit, however, that has made the name of Curaçoa known to the world is the Orange grown there, *Citrus vulgaris*, there called Naranja cajera. Both the tree and fruit are small, and the latter is of a deep-green color. No other tree receives such care and cultivation as this. The fruit itself is only used, with syrup, to make a sweetmeat, or dulce, as it is called. The skins are what are harvested for a constant market. At that stage of development of the fruit when the rind contains a maximum of oil, the fruit is picked and peeled in quarters, and the quarters are dried and pressed, and packed in half barrels for export.

"The total product of the orchards in Orange rind is shipped to Amsterdam, and the price paid varies from 80 cents to $2.00 per Dutch pound—a tenth more than the pound avoirdupois. By distillation the oil is extracted from the skins or peel, and is used to flavor the celebrated liqueur, "Curaçoa." As oil may be extracted from the skins of all kinds of Oranges, so they may be used to flavor liquors; and perhaps this accounts, to some extent, for the fact that "Curaçoa" is manufactured in Germany and France, and that the supply in the principal cities of the world is never behind the demand."

THE IMMORAL COCOA-NUT.

The worst thing about the Cocoa-nut Palm, says *Grant Allen*, the missionaries always say, is the fatal fact that, when once fairly started, it goes on bearing fruit uninterruptedly for forty years. This is very immoral and wrong of the ill-conditioned tree, because it encourages the idyllic Polynesian to lie under the palms all day long, cooling his limbs in the sea occasionally, sporting with Amaryllis in the shade, or with tangles of Nera's hair, and waiting for the nuts to drop down in due time, when he ought (according to European notions) to be killed himself with hard work under a blazing sky, raising Cotton, Sugar, Indigo, and Coffee for the immediate benefit of the white merchant and the ultimate advantage of the British public. It doesn't enforce habits of steady industry and perseverance, the good missionaries say; it doesn't induce the native to feel that burning desire for Manchester piece-goods and the other blessings of civilization which ought properly to accompany the propagation of the missionary in foreign parts.

You stick your nut in the sand; you sit by a few years and watch it growing; you pick up the ripe fruits as they fall from the tree; and you sell them at last for illimitable red cloth to the Manchester piece-goods merchant. Nothing could be more simple or more satisfactory. And yet it is difficult to see the precise moral distinction between the owner of a Cocoa-nut grove in the South Sea Island and the owner of a coal-mine or a big estate in commercial England. Each lounges decorously through life after his own fashion; only the one lounges in a Russia-leather chair at a club in Pall Mall, while the other lounges in a nice soft dust-heap beside a rolling surf in Tahiti or the Hawaiian Archipelago.

CARNIVOROUS PLANTS.

Although physiologists have universally accepted the facts originally proposed by Darwin as correct, yet there has been a disposition in some quarters, says the *Gardener's Chronicle*, to question the fact, at least to doubt its utility. Mr. Francis Darwin undertook some experiments to satisfy the latter point, and now we have to record the results of some experiments made by M. Busgen. This gentleman commenced his experiments with seedling Droseras, and ascertained that the digestion of nitrogenous matter begins with the appearance of the first leaf. The experiments were continued for two years, with the result that those plants "fed" with nitrogenous diet in the shape of aphides and small insects were the more vigorous. Fourteen plants so treated produced seventeen flower-stalks and ninety seed-pods, while sixteen plants not so treated produced only nine flower-stalks and twenty seed-pods.

More conclusive still were the results of analysis, given in the *Annales Agronomiques*, which show for the first set a total weight of dry matter (remaining after the expulsion of water by heat) of 0.352, while the unfed plants yielded only 0.119 parts of a gramme.

POISONOUS COFFEE.

Most people think if they buy Coffee in the berry, roast and grind it at home, they are sure of having obtained a healthy article—the Simon-pure Java. But it may be they have been both deceived and poisoned. In Brooklyn, the *Scientific American* states, the health inspectors recently found several well-known coffee-dealers who were in the habit of doctoring cheap Central American Coffee, so as to make it resemble and sell for the true Java. This was accomplished by polishing the Coffee berries in rotating cylinders, with the addition of such stuffs as chromate of lead, Silesian blue, yellow ocher, Venetian red, drop black, burnt umber, charcoal, soapstone, chalk, and Prussian blue. Some of these substances contain lead, copper, and arsenic, and when the doctored Coffee was subjected to chemical test these metals were found in poisonous quantities. The Health Board promptly ordered the discontinuance of this mode of Coffee adulteration, to the benefit of the public.

MEASURING THE AGE OF TREES.

The counting of the rings added by exogenous trees every year to their circumferences can only, without risk of great error, be applied to trees cut down in their prime, and hence is useless for the older trees which are hollow and decayed. Trees, moreover, often develop themselves so unequally from their center, that, as in the case of a specimen in the museum at Kew, there may be about two hundred and fifty rings on one side to fifty on the other. Perhaps the largest number of rings that has ever been counted was in the case of an Oak felled in 1812, where they amounted to seven hundred and ten; but De Candolle, who mentioned this, adds that three hundred years were added to this number as probably covering the remaining rings which it was no longer possible to count.

The external girth measurement is for these reasons the best we can have, being especially applicable where the date of a tree's introduction into a country or of its planting is definitely fixed, since it enables us to argue from the individual specimen or from a number of specimens, not with certainty, but within certain limits of variability, to the rate of growth of that tree as a species. In these measurements of trees of a century or more in age, such as are given abundantly in Loudon's "Arboretum," lies our best guide, though, even then, the growth in subsequent ages must remain matter of conjecture. The difficulty is to reduce this conjectural quantity to the limits of probability; for, given the ascertained growth of the first century, how shall we estimate the diminished growth of later centuries? The best way would seem to be to take the ascertained growth of the first century, and then to make, say, the third of it the average growth of every century. Thus, if we were to take twelve feet as the ascertained growth of an Oak in its first century, four feet would be its constant average rate, and we might conjecture that an Oak of forty feet was about a thousand years old. But clearly it might be much less; for the reason for taking the third is not so much that it is a more probable average than the half, as that it is obviously less likely to err on the side of excess of rapidity.—*J. A. Farrar, in Popular Science Monthly.*

CATALOGUES RECEIVED.

Premiums, Rules, and Regulations of the Berks County Agricultural and Horticultural Society, at the annual Exhibition to be held at Reading, Pa., from September 23d to 26th.

Wm. Parry, *Parry P. O., N. J.*—Wholesale Trade Catalogue for Nurserymen and Dealers. Parry Strawberry, Wilson, Jr. Blackberry, Marlboro Raspberry, Kieffer and other Hybrid Pears, specialties.

Woolson & Co., *Passaic, N. J.*—Catalogue of Bulbs for Autumn Planting. A neat, tastefully illustrated pamphlet, containing a complete descriptive list of all sorts of bulbs and bulbous roots suitable for fall planting.

J. Walter Thompson, 39 *Park Row, New-York.*—Illustrated Catalogue of Magazines, compiled for the use of advertisers. A handsome pamphlet, containing, in addition to the lists, some valuable suggestions as to the circulation of papers, permanence, attractiveness, and character of advertisements.

Hale Brothers, *South Glastonbury, Conn.*—Summer and Autumn Price List of Pot-grown and Layer Strawberry Plants, with general List of choice Small-fruit Plants. This is a most carefully selected list of the best varieties in each class, and the directions for planting and general management are practical and reliable.

OUR BOOK TABLE.

California, the Cornucopia of the World. A pamphlet published by the California Immigration Commission, 103 Adams street, Chicago, Ills., setting forth in glowing terms the commerce, manufactures, climate, lands, agricultural and other resources of the "Golden State."

Department of Agriculture.—Descriptive Catalogue of Plants in the exotic collection, prepared by William Saunders, Superintendent of Gardens and Grounds. This descriptive Catalogue, prepared for the purpose of serving as a guide to those who desire to inspect and study the plants in the conservatories of the Department, enhances considerably the value of these collections to the public.

Godey's Lady's Book for September presents special attractions. There are two excellent serials now running, and this month's installment is even more amusing than last month's. There are two capital short stories in this issue. Among the other attractions of the book is a fine steel-plate illustration of the story, "A Tempest Indoors," by Emily Lennox. The music, colored plates, and Presidential portrait are all excellent.

The attractions of this venerable magazine seem to multiply each month. *Godey's* will well repay perusal.

New System of Ventilation, *by Henry A. Gonge,* published by D. Van Nostrand, New-York. In this volume of nearly two hundred pages, the author demonstrates that ventilation apparatuses, as generally constructed, do not and cannot accomplish the objects for which they are designed, viz., the complete removal of the vitiated air and exhalations from a room as fast as they are produced, and the introduction of an equal volume of pure air at the same time. This seems to be fully accomplished by the new system. Suction pipes, located at the proper points, are so constructed that, by the use of a gas or oil flame, a current of air is created strong enough to remove any amount of air from the room. The thus expelled impure air is instantly replaced with an equal volume of fresh air, which, before passing into the room, may be warmed or cooled, as desired. Numerous descriptions of buildings in which this system is in successful operation show its adaptability to every conceivable structure requiring ventilation.

The Fallacies in "Progress and Poverty," in Henry Dunning Macleod's "Economics," and in "Social Problems," with the Ethics of Protection and Free Trade, and the Industrial Problem considered *a priori.* By William Hanson. Extra cloth, $1.00. Fowler & Wells Co., publishers, 753 Broadway, New-York.

This is a bold attack by a candid writer on leading points and arguments made by Mr. Henry George, in his well-known "Progress and Poverty" and "Social Problems." Mr. Hanson is as radical as the Land Reformer himself, in his views of the fundamental changes necessary to true social progress. "The Ethics of Protection and Free Trade" constitutes one essay, in which the principles of the two great parties that stand arrayed against each other on the Tariff question are reviewed in the light of political responsibility and what constitutes true national progress. The work is written for the people, from the point of view of the practical man and Christian philosopher who is consciously radical, but seeks to make his every proposition for social reform based upon justice, and responsive to the simple demands of humanity.

Practical Forestry, a Treatise on the Propagation, Planting, and Cultivation, with a Description, and the Botanical and Popular Names of all the Indigenous Trees of the United States, both Evergreen and Deciduous, together with notes on a large number of the most valuable exotic species, by *Andrew S. Fuller.* Published by the *Orange Judd Company,* New-York. Price, $1.50.

The want of a condensed and yet comprehensive work on the trees of the United States has always been seriously felt by every one interested in forestry, as well as in ornamental planting; and the reason why a book on this subject has not been published ere this can only be found in the fact that the number of persons capable of writing such a work is microscopically small, and among those no one is more competent to the task than the author himself, through his life-long practical experience, careful observations, and rare scientific attainments alike. The chapters on Influence of Fruits on Climate, Characteristics of Trees, Raising, Transplanting, Budding, Grafting, and Propagating Trees, are models of concise, practical advice and directions. The chapter on Pruning, which we reprint on another page, may well serve as an illustration of the tone of the entire book. But by far the greatest value of the work consists in the alphabetically arranged descriptive list of trees, the most complete that has ever been published. The botanical as well as the popular names of each species and variety are given; and the descriptions, interspersed with many illustrations, are so accurate and vivid, that any one at all familiar with trees will find no difficulty in identifying most kinds. The uses of the wood, fruits, flowers, or other parts, are fully set forth with each species, as well as its value for forest or ornamental planting. To the tree-planter, landscape-gardener, and nurseryman this volume is worth many times its cost, while to the botanist and student of forestry it is invaluable.

[Mr. Fuller is now engaged in collecting material for a work on nut-bearing trees, and would be pleased to receive specimens of rare and unusual nuts of all kinds. Of course, he does not want common nuts that are found everywhere, but there are sometimes found single trees which vary considerably in the shape and size of their nuts, and otherwise from the typical forms. Any one having such specimens may add to the general knowledge of this interesting class of trees by giving an account of them and mailing specimens to *Mr. A. S. Fuller, Ridgewood, N. J.*]

The Orchids of New England, by *Henry Baldwin,* published by *John Wiley & Sons, New-York.* Price, elegantly bound, $2.50.

The appearance of a work of this kind, intended not so much for specialists in botany as for intelligent readers of all classes, is a most gratifying indication of an increasing interest in the study of natural sciences; and no family of plants offers richer or more varied material to excite the interest of beginners than Orchids. Persons who associate Orchids with the heat and luxuriant vegetation of southern climates only, are made aware that within the area of New England not less than forty-seven species and varieties are found, which, although not of parasitic habit, and not as large-flowered and brilliantly colored as their tropical sisters, are in their structure closely allied to them. The synopsis given as an introduction to the work is so plain and concise, that it enables any one at all familiar with the structure of flowers to identify any species at sight almost. The principal part of the work consists in a special description of all the species, commencing with *Orchis spectabilis,* the earliest to flower, and closing the cycle with the fall-blooming *Spiranthes.* This discourse, however, is far from being simply a dry, scientific description, of interest only to the professional botanist; but in a most charming style, enlivened by many excellent illustrations, the author interweaves hundreds of interesting items of information about vegetable physiology, geography, mythology, poetry, etc., making its reading as attractive as a fascinating novel. This is followed by accounts of the experiences of several horticulturists in cultivating indigenous Orchids. A list of stations at which the various species are found, shows the range of each species through New England and, as far as possible, in each State, together with the degree of its abundance or rarity. This will be of great value to all collectors, although the author states that the pleasure in printing it is considerably lessened by the fear that he may be sounding the death-knell of some of the rarer kinds, and he advises the formation of societies for their protection.

The careful, painstaking work of the author, as well as the enterprise and liberality of the publishers, is highly to be commended. If this book could be placed in the hands of every graduate on leaving college, its reading would serve a better post-graduate course than anything else we can imagine. It would, no doubt, open a new and enchanting world to many; would interest them in the study of nature; educate them to the purest and most refining enjoyments, and develop them into nobler men and better women.

ANSWERS TO CORRESPONDENTS.

Soluble Pacific Guano.—*E. M., New-York.*—This is manufactured or prepared by the Pacific Guano Co., of Boston. We do not find it on the lists of the leading dealers in fertilizers here.

Propagating Fuchsias.—*I. F. C., Wakefield, Mass.*—Cuttings of Fuchsias may be made at any time during winter. They strike root readily in about two weeks, when they should be potted off into small pots. If repotted frequently, so that they never become pot-bound, and are kept in a healthy growing condition, they will make fine blooming plants the following summer.

Passiflora princeps.—*Mrs. S. C. P., Laprairie, Quebec.*—This species is a warm greenhouse plant, and unless unusual care is given will not thrive in an ordinary living-room. When the plant starts into vigorous growth, it requires a good deal of water, and at all times it should be carefully guarded against dust. It flowers again and again on the same flower-stalks. These should, therefore, never be removed.

Clematis from Seed.—*J. B., Decorah, Iowa.*—*Clematis coccinea* grows easily from seed, but it is doubtful whether the plant will bear seed in your latitude. It may also be propagated by cuttings from the half-ripened wood in summer, or, easier still, by layering the young shoots in summer, about the time the plant begins to bloom. They will then be rooted in the fall, when they may be detached and transplanted, or left till the following spring.

Propagating Pyrus Japonica.—*F. H. M., Nazareth, Pa.*—This beautiful shrub may be propagated by cuttings similar to the common Quince, or by root cuttings placed on a propagating bench; but a surer way, for amateurs at least, is by layers. Any young branch, when bent down, making a slight incision at the bend, and covering with a few inches of soil, will make roots. If layered in July, sufficient roots will form, that the branch may be detached and transplanted the following spring.

Hardy Vines.—*Mrs. W. J. F., Ridgefield, Conn.*—The list of hardy ornamental vines is so large, that it is rather a perplexing matter to select *the* best. Still, if we were limited to a single one for covering a small stone-heap or stump in a garden, we should not hesitate to choose *Clematis Jackmanni. C. coccinea*, and several other species of this beautiful genus, are equally suitable. *Akebia quinata*, several of the Honey-suckles,—*Lonicera Hallcana* especially,—and *Ampelopsis Veitchii*, cannot fail to give satisfaction. All of these may be planted in October or early spring.

Blackberry Canes Dying.—*G. R. L., Portsmouth, N. H.*, writes:

"I have in my garden a fine lot of Kittatinny Blackberries. They have been set three years, and have done splendidly. This season some disease has appeared among them, and attacks old and new canes alike. The leaves turn yellow and fall, and the canes die. In some cases the canes turn black close to the ground, and in others one side of the cane will be black the whole length, and it quickly spreads around it. I cut out the diseased canes as fast as they appear, and have not been able to discover any borers or insects inside or out. Some I have pulled up by the roots, and the roots look perfectly sound and healthy. I gave the ground a good coat of wood-ashes, hoping to stop it, but still they die. I have not been able to discover any trace of 'rust.'

"These berries have been my boast and pride, and if you can suggest any remedy for the trouble you shall have my lasting gratitude."

The trouble with your Blackberries is probably caused by some insect, and if you will make a careful examination of the roots and lower parts of the canes, by cutting them open longitudinally, you will, no doubt, find the enemy or its tracks. There is no effectual remedy for this pest, and the best that can be done is to dig up and burn the so affected plants as soon as they show a sign of disease. A thick coat of coal ashes spread along the rows may do some good, but our principal trust must be placed in the small parasitic insect which has made its appearance, and attacks and destroys the larvæ of the borers. We should be pleased to hear from any readers who have had experience in this matter.

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The Concentrated Fertilizers sold by the *Brown Chemical Co., Baltimore, Md.*, advertised on another page, are rapidly becoming introduced throughout the country, and many leading farmers, North as well as South, speak in high terms of their unvarying good and profitable results.

The Great London Tea Co., *of Boston*, offers in our advertising department some remarkably liberal premiums to purchasers of tea and coffee in club orders. Hardly credible as it may appear that so much can be given for so little money, the house enjoys an enviable reputation, and, we have no doubt, will do all it promises.

Ladies' Fancy Work, published by *J. F. Ingalls, Lynn, Mass.*—The new edition of this useful book is a great improvement over the former ones, good as they were. For eighteen two-cent stamps, the price of the book, any lady can obtain instructions and patterns for an almost endless variety of all imaginable kinds of needle and fancy work.

Kemp's Manure Spreader, manufactured by the *Kemp & Burpee Mfg. Co., Syracuse, N. Y.*, is an invaluable implement on every farm large enough to support a team of horses. Its superiority and saving of labor over spreading manure with a fork, is as great as that of the mowing machine over a scythe. It needs but to be seen to convince any one of its wonderful capacity.

Ventilating and Heating Greenhouses.—*Thos. W. Weathered, 46 Marion St., N. Y.*, whose advertisement will be found in our advertising department, has been awarded the contract for furnishing over three thousand feet of ventilating apparatus, to open the sashes of Horticultural Hall, connected with the World's Exposition Building at New Orleans. This is high indorsement indeed of the excellence of this apparatus, when it is considered that nearly every manufacturer of heating and ventilating apparatus in the United States competed for these contracts.

The Sedgwick Steel Wire Fence.—*Sedgwick Bros., Richmond, Ind.*—To the farmer and country resident in general there is hardly any appliance of more importance than a serviceable, durable, and cheap fence, be it for the farm, garden, poultry or stock yard, or the many other purposes requiring the inclosing of grounds. To any one in want of fencing of any kind whatever, we can confidently recommend the above firm as reliable and trustworthy. Their catalogue, which, in addition to the enumeration and prices of their goods, gives a good deal of useful information about fencing, is sent free to all applicants.

The Beatty Organ and Piano Co.—The name of Daniel F. Beatty, of Washington, New Jersey, is tolerably well known to the majority of the people of the United States in connection with the manufacture and sale of musical instruments. It was his ambition to erect and own the largest organ factory in the world, and he succeeded in so doing. But the hindrances and losses incident to a disastrous fire in 1881 became so serious that he finally sold his business to a corporation composed of his creditors. It is understood that this company, with ample capital, has undertaken to make good as far as possible all the obligations of Mr. Beatty. The company is under the presidency of Mr. I. W. England, of New-York, his manager being Mr. W. P. Hudwen; and the gentlemen composing the directors and stockholders are among the best known and most responsible business men in the country. All new orders, we are assured, are filled on receipt with instruments of the best quality; while arrearages are being manufactured and shipped at the rate of not less than one hundred a week. On such a basis, supplying a superior article at a moderate price, free of agents' commissions, the new concern ought to achieve a great success.

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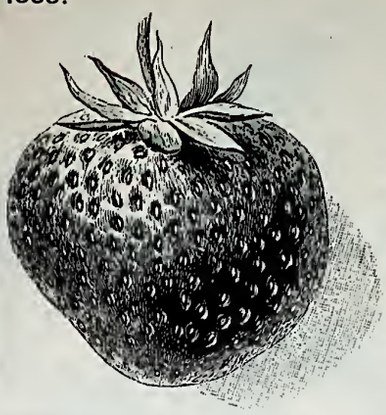

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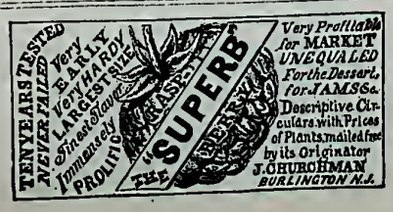

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$2.50 per 100; $1.50 for 50; $1.00 for 25.
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Layer plants, 50 cts. per dozen, 75 cts. for fifty, $1.00 per hundred; *ready September 15.*

EARLY.	MEDIUM.	LATE.
Crescent (P),	Cumberland Triumph,	Glendale,
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At the dozen rate, layer plants witt be sent by mail, postage prepaid. At the hundred rate, if to be sent by mail, 50 cents per hundred for postage must be sent in addition to the price.

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To develop the Plumes to their original size and beauty, they should be held before a stove, shaking them briskly at the time.

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Bags, containing two bushels, $5.50.

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By mail, post-paid, to any address.

For list of varieties contained in each, see page 44 of our **Autumn Catalogue**, containing 72 pages, beautifully illustrated; will be mailed to all applicants for 10 cents. If you send us an order for Bulbs amounting to **FIVE DOLLARS** or over, we will present you with a subscription to **THE AMERICAN GARDEN** for one year. Address

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Seed, Plant, and Bulb Warehouse,
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No. 10, a forcing glass of clear flint; very long, allowing the roots full growth. Price very low: 10 cents each; $1.00 per dozen.

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A New Winter Wheat

WINTER PEARL.

This new and promising variety is the result of an experiment made by F. H. Horsford, of Charlotte, Vermont, in 1878, and is a cross between those two well-known wheats, the Diehl and Clawson. The heads are beardless, regular, and very handsome, five and a half inches long, with eighteen to twenty breasts of four grains each. Kernels about the size of the Clawson, hard, plump, and of a light amber color. Straw from three to five feet high, bright yellow, strong and elastic; tillers freely, forty heads having been counted from one kernel. It matures with Clawson, and has produced the past season (1883) in Northern Vermont at the rate of forty-five bushels per acre from one bushel of seed, and would doubtless have been even more productive in a better wheat country. Price: 3 lbs. by mail, $1.00; per peck, $2.50; per ½ bushel, $4.50; per bushel, $8.00.

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FOR SOWING IN AUGUST AND SEPTEMBER.

Of Easy Cultivation in Parlor, Greenhouse, and Garden.

Particular attention is invited to the following list, the seeds being of a quality that cannot be surpassed. They have been selected from the stocks of several of the most successful cultivators and exhibitors in this country and Europe, and we can confidently recommend them to growers requiring specially good strains for either commercial or competing purposes.

A GRAND DISPLAY
of this celebrated strain of Pansy
can be secured next Spring
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PERFECTION PANSY.

Awarded a FIRST-CLASS CERTIFICATE by the N. Y. Horticult'l Society, Spring, 1883.

*** BLISS'S ***

PERFECTION PANSY.

A colored plate of this charming novelty appeared in THE AMERICAN GARDEN, March, 1884.

Per pkt.
(of 50 seeds, mixed colors)
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Special Prices to Florists for
Larger Quantities.

No.		Per pkt.
358.	**Aquilegia cerulea Jamesii.**—Offered for the first time last Spring; flowers pure white, very large, and borne in graceful racemes; quite hardy	$0.25
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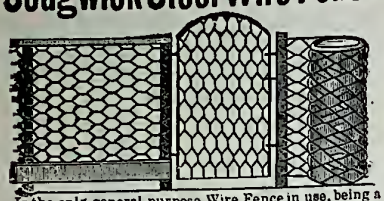

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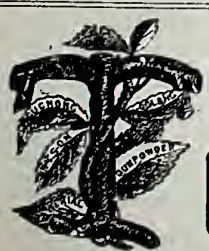

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, OCTOBER, 1884. No. 10.

OUR PREMIUM LIST.

We wish to draw the special attention of our readers to our large and liberal Premium List, on page 197 of this number. We are aware that some of our readers do not care for these presents, considering the paper fully worth its price, and good enough without premiums; yet others think differently, and will gladly accept a good thing when it may be had without cost.

But besides this, the seeds, plants, bulbs, etc., offered in our Premium List to subscribers and those who will assist in extending the circulation of our paper, are really articles of more than ordinary merit, and the bringing of them to the notice of those who would otherwise remain in ignorance of their existence is a not unimportant part of the object of THE AMERICAN GARDEN—that of distributing knowledge, and of developing and educating rural taste. Every progressive step suggests and indicates still further improvement, and leads nearer to perfection. It is therefore that we would much rather see all our subscribers avail themselves of the liberal offers made in our Premium List, and see for themselves that THE AMERICAN GARDEN furnishes not only mental, but also material aid to its friends.

PRESERVE YOUR PAPERS.

Hardly a week passes without receiving some inquiries about matters which have been fully discussed in recent numbers. While we are always glad to give all desired information as far as is in our power, it does not seem just toward the majority of our readers who preserve their papers for future reference to fill our pages with repetitions of what has already appeared but a few months ago. Those who do not keep their papers have evidently not considered how great and varied an amount of information is contained in a year's file. Together with the complete and carefully-prepared index, which is furnished free to every subscriber at the end of the year, the annual volumes of THE AMERICAN GARDEN form in themselves a horticultural library, treating of every imaginable topic pertaining to Flowers, Fruits, Vegetables, Lawns, Landscape Gardening, and Rural Life in general.

Do preserve your papers!

DON'T FORGET

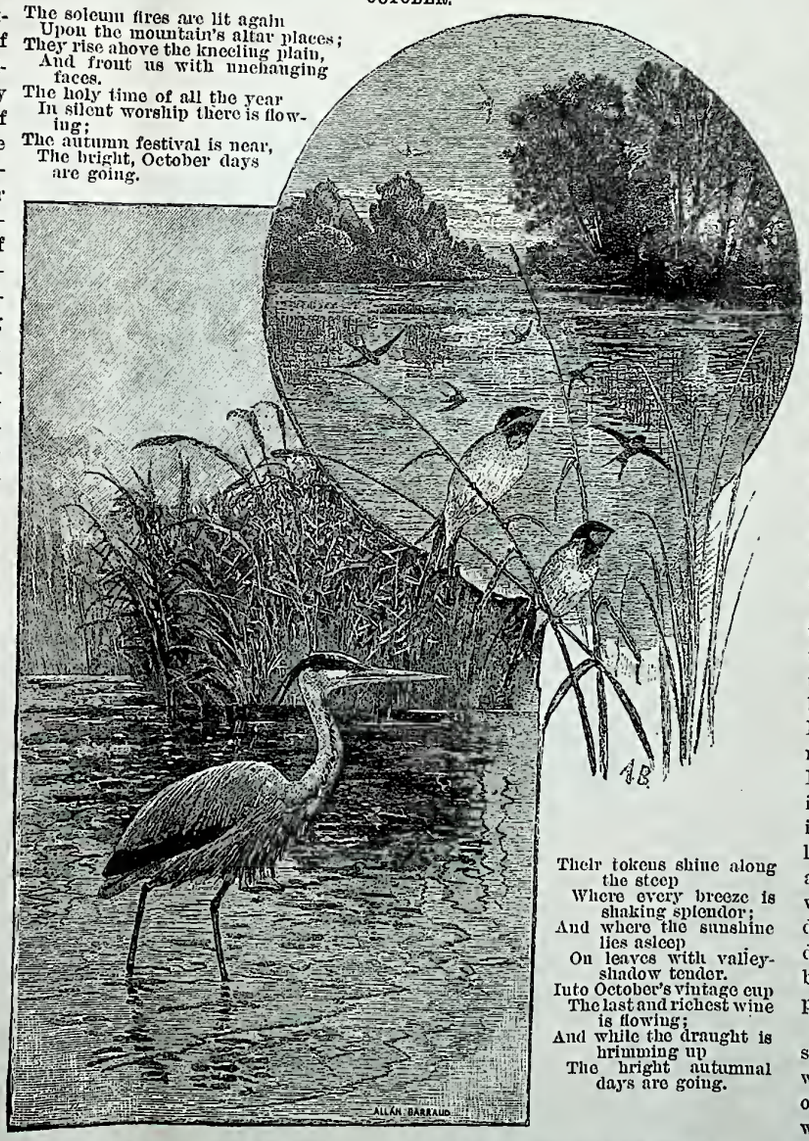
that *each member* of a club for the premiums offered to subscribers to THE AMERICAN GARDEN for 1885 is entitled to any *one* of the premiums offered to single subscribers. This will be of great help to those soliciting subscriptions, as they will be able to promise a separate premium to every subscriber.

RENEW NOW! SUBSCRIBE

Remember that every person sending a renewal of, or a new subscription to, THE AMERICAN GARDEN for 1885, NOW, is entitled to the remaining numbers for 1884, *free of expense*, also to any *one* of the premiums offered to single subscribers. Those who are already subscribers for 1884 may have the remaining numbers of this year sent to any address they may designate, *free of expense*.

OCTOBER.

The solemn fires are lit again
Upon the mountain's altar places;
They rise above the kneeling plain,
And front us with unchanging faces.
The holy time of all the year
In silent worship there is flowing;
The autumn festival is near,
The bright, October days are going.



Their tokens shine along the steep
Where every breeze is shaking splendor;
And where the sunshine lies asleep
On leaves with valley-shadow tender.
Into October's vintage cup
The last and richest wine is flowing;
And while the draught is brimming up
The bright autumnal days are going.

And but that every year doth hold
Its summer by a winter darted,
And every fiery autumn fold
A death beneath it, frosty-hearted,
Too perfect were those crowning days—
So rich the ebbing life is flowing;
Each dying in a sunset blaze,
The bright, October days are going.

And in his royal robe and crown
The year awaits the spoiler hasting;
And scarce will lay his glory down
Before the foe whose touch is blasting.
Too few the golden days, alas!
So much with them is outward flowing;
They take the sunshine as they pass—
These bright, October days are going.

CARL SPENCER.

HORTICULTURAL INSURANCE.

Nearly every person believes in insurance of some form, Life, Fire, Accident, and the number of disbelievers would be still lessened were it not for the large premiums required to carry the policies, so large in some cases that many large corporations, owners of steam-ships, etc., prefer to carry their own risks rather than pay the large amounts required for premiums. If a company were established whose premiums were merely nominal, how it would be welcomed by the public at large.

THE AMERICAN GARDEN insures against losses in the garden, and may therefore, in some sense, be termed a Horticultural Insurance, with a merely nominal rate of premium. For one dollar a year—its subscription price—it insures to those who follow its teachings health and happiness, thrifty, vigorous plants, and freedom from the many accidents that constantly beset the path of the inexperienced horticulturist.

Try it for one year and see if your experience will not be similar to that of most of our subscribers who find enough information in many a single number to pay the cost of the paper for an entire year. See special offer on page 197.

FRIENDLY WORDS.

My success in gardening is principally due to the information derived from THE AMERICAN GARDEN.—*N. T. L., Astoria, N. Y.*

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The Vegetable Garden.

SEASONABLE HINTS.

"*Weeds* will do no harm so late in the season," is a common saying with slipshod gardeners and farmers, and a most deceitful and mischievous doctrine it is, too. Weeds do harm to cultivated plants, at any and every stage of their growth,—the young ones, by depriving the growing crops of some of the most important elements necessary for their best development; and the full-grown ones, by ripening and scattering their seeds thousand, nay million, fold over the land. Actual count has shown that a single plant of Shepherd's Purse and Ox-eye Daisy produce nearly a hundred thousand seeds, Pigweed a million, and Purslane, alas! over two millions.

That with such a bountiful seeding-down to weeds a crop can be raised at all seems the most surprising part of it. We know very well—from a life-long experience in the garden and on the farm—that "not to let a single weed go to seed" is easier said than done; but unless one makes the attempt, he will surely never succeed. And, in order to succeed, it must be made a firm policy and fixed principle to wage a perpetual and relentless war against every weed, as much so as we would against scorpions and rattlesnakes. If carried out, there is the great satisfaction that the task becomes easier with every succeeding year. We know of some gardens—not many, to be sure—in which the plan is carried out, and as the result of which it seems that every trace of weeds has been entirely exterminated.

Parsley is used more for ornamentation of dishes than in their preparation, although its flavor in soups, sauces, salads, and various dressings is very agreeable to most persons, especially during winter, when Lettuce and other fresh relishes are not easily obtainable. In the Northern States the plant is not entirely hardy, but a light covering of leaves or straw, and a few branches on top, will preserve it so as to furnish a supply for early spring. For winter use, however, the roots have to be transferred to a warmer place before hard frosts occur. When the stock is sufficient, so that not more than one or two cuttings are required, a cold frame serves the purpose very well; but planted on the benches of a moderately warm greenhouse, it grows all winter, and may be cut half a dozen times.

A neat and pretty way is to plant it in a small keg, through the sides of which a number of holes have been bored. The keg is filled with rich soil, through each hole a root is inserted, and the remaining ones planted on the top. By keeping such a keg in a light kitchen window, giving plenty of water and an occasional dose of soap-suds, it will soon become entirely covered with foliage, present a bright, cheerful appearance, and furnish a never-failing supply of garnishing greens.

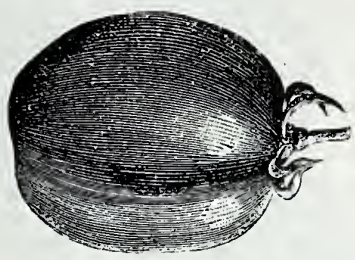
Asparagus may be planted at any time this month, provided the ground is well drained; otherwise it is better to defer planting till spring. Good, vigorous plants one or two years old, rich soil, and plenty of room are the main requisites for successful Asparagus growing.

DIGGING AND STORING ROOTS.

The harvesting of roots by the old hand methods—pulling and spading—is a slow and laborious task. To make root-raising profitable, most of the hand labor that was, and still continues to be, quite an impediment to the industry must be done away with.

Those roots that produce the main bulk of their growth above ground, such as the flat Beets and the Turnips, can be pulled by hand, and thrown into piles to be topped, about as cheaply as by any other method, but those that root deeply must be handled in some other way. Hand digging with the spade or shovel is too slow and expensive. The plow is an unwieldy implement for this work. I have used a home-made contrivance that performs the work excellently. It is so very simple of construction that every farmer can have one at but little expense.

Any one-horse cultivator that can be taken apart so that only the handle, beam and wheel remain may be readily converted into one of these root-lifters, or diggers. The only extra piece that is needed is a long, narrow shovel, that is either set into a mortise in the beam or tightly clamped to one side of it. This shovel must be long enough to allow the beam to run at the usual height from the ground and reach down below the roots.



KING HUMBERT TOMATO.
(Half natural size.)

The point of the shovel should have about the same form as that given to the narrow shovel-teeth of the garden cultivator, excepting the point, which should have a small steel wing attached on the right side. It may be a small steel plate bolted to the shovel proper, or a piece welded on. Commencing at a point at the lower end of the shovel, it should run outward and upward to a width and height of about five inches.

This lifter is drawn by one horse, which should be led or driven close to the left side of the row. The plow can be set to the required depth by changing the wheel and varying the pressure on the handles. If properly held, most of the roots will be thrown to the surface, while all will be so loosened and lifted that they may be readily and rapidly picked up after the digger. If the tops are very rank and heavy, they should be mowed off with the scythe before running the digger through, that the workman may see what he is about and hold the implement advantageously.

Roots should not be topped too soon after digging. The tops should be given a few hours to wilt, after which the juices will have become more solidified. If topped at once, before they have time to prepare for the change, there will be more or less bleeding from the cut portions, to the detriment of the roots.

After being topped, they should not be long exposed to the sun and wind. They should be piled in heaps of ten or twelve bushels, and covered with coarse wild grass, or some such material that will exclude rain, but still allow the sweating process to go on unimpeded.

They need not be removed from these temporary pits until quite late in autumn, when heavy freezing begins to threaten. Their final housing can thus be done at a time of leisure, or after the rush of other work is over.

Roots are easily kept in pits through the entire winter. A long, narrow pit or trench may be dug, large enough to contain the amount to be stored, and this filled in sections of three or four feet in length, with walls of earth a foot or so in thickness between the sections. When so arranged, a section may be taken out at any time without disturbing the rest. The top covering should be of alternate layers of straw and earth, and should extend several feet over the sides of the trench, to prevent freezing from underneath.

W. D. Boynton.

THE KING HUMBERT TOMATO.

It cannot be said that European novelties always come up to representations; it is, therefore, gratifying to note that this new Tomato seems to have even more than fulfilled its promises. It was described as "of the size and shape of a large Plum, scarlet, very smooth and glossy, containing but few seeds, and in flavor closely resembling that of an Apple of fine quality; one of the earliest, and more productive than any other sort." One should hardly expect to find all these claims verified; but the following communication from Mr. C. S. Hubbell, of Stratford, Ct., shows that the variety is deserving of all the praise claimed for it:

"When my Humberts began to ripen so unevenly, my hope fell; when, on slicing, I found the contents 'discontinuous,' there was no repressing my disappointment. As a mere curiosity, I plucked a truss carrying nine plum-shaped fruits and laid them on my library table. In a few days I was amazed to see how perfectly they had ripened, and how very brilliant they had become in their rich, orange-red jackets. For more than three weeks we have now had them served, stewed, on the table; and though I have five other varieties in my garden, I am not able to persuade my family to use any other for this purpose. As a salad, we still find no other to equal the Acme, or perhaps the Cardinal, which we are now also testing and have a very favorable opinion of.

"For prolificacy nothing approaches the Humbert; it yields more than double the weight of the others. From five vines I have already gathered over two bushels of fruit. The plants are literally one mass of touching berries.

"As soon as they begin to color on the vines, they ripen better in the house spread out on shelves, for their sugar and flavor are not fully developed until they become absolutely uniform in color, or a bright, vesuvius red.

"Their freedom from water makes it possible to serve them on the table with so little cooking that they do not lose their rich flavor, and catsup from them is the finest I have ever tasted."

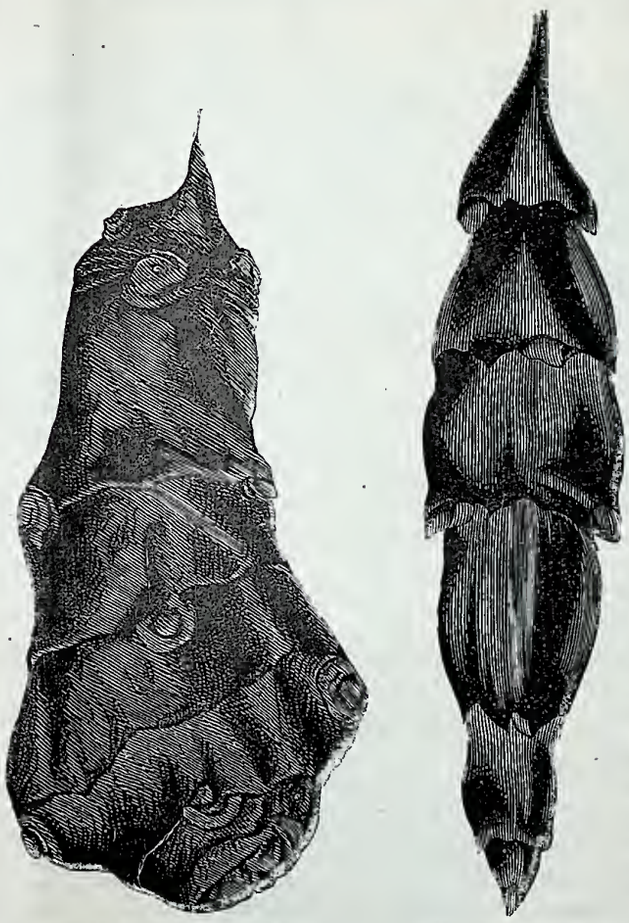
JERUSALEM ARTICHOKES.

It is to be regretted that two plants so widely differing as this and the real, or Globe, Artichoke should have received the same popular name, and thereby cause annoying confusion. "Topinambour," the French name, would be far more appropriate for this plant.

The edible part of the Jerusalem Artichoke is its tubers, which, in general appearance, resemble Potatoes, and are prepared in similar manner; but, being less mealy, they are more frequently used for stewing, salads, and pickling. The plant resembles a Sunflower, and grows to about the same height. Its culture is similar to that of the Potato; the tubers are planted in early spring, whole, or cut in four to eight pieces, according to their size, and regardless of the position of their eyes. The sets are then dropped every twelve or eighteen inches in furrows from three to four feet apart, and covered exactly like Potatoes. After the sprouts appear, the ground has to be kept clean from weeds, and cultivated; but it should never be stirred very deep nor hilled up much, as the roots and tubers penetrate the entire space between the rows, and would suffer seriously by deep cultivation.

In the fall, before the ground freezes, the tubers wanted during winter are dug and stored in a cellar or pit. Those for spring use may be left in the ground without injury, except in wet locations.

The principal varieties cultivated are the *Long Red* and the *White French*, the latter much the better for cooking purposes.



WHITE FRENCH ARTICHOKE. LONG RED ARTICHOKE.

A TALK UPON PEAS.

Few products of the garden are more generally popular on the table than green Peas. The amateur is hungry for them before pods are large enough to gather, and the housekeeper counts the days until they will answer for use.

The sweetness and tenderness of this delicious vegetable depend more than some know upon the stage of growth at which it is gathered. The housekeeper who buys her Peas at the market often feels that she must have every pod distended by the fully developed Peas in order to make sure of the worth of her money, but every old gardener knows that Peas are sweeter and more tender when used before they begin to crowd each other in the pod.

A true gardener prides himself on getting the first mess of Peas from his garden before his neighbors' are fit. Although it may seem out of season to talk of early Peas now, those who desire to beat their neighbors next spring will do well to commence preparations this fall, before the ground freezes.

Late in the fall, choose, if possible, a part of the garden that is sheltered on the north by a high fence, a building, or a row of trees, and throw the soil into slight ridges with the shovel-plow or by hand. This will cause the soil to dry out in spring sufficiently to work several days before the remainder of the garden will do to plow. Then, when the robins and blue-birds announce the return of spring, place a quantity of seed of one of the earliest varieties of Peas in a box of moist sand, placing the latter in a warm part of the kitchen. Leave them here until the Peas are well sprouted, sprinkling the sand with water as it becomes dry.

If, after the young shoots start, winter still rules out-of-doors, as it often does, set the box in a cool part of the cellar, cover it, to guard against mice, and rest in complacency, with the assurance that your neighbor can do no more than you have done. The box may remain in the cellar a month, if need be, without harm to the miniature plants.

Level the soil of the ridges as soon as it becomes dry enough to work, and plant the Peas carefully, with the radicle downward. Last spring (in a carefully conducted experiment) I gained eight days by sprouting my seed in this manner before planting.

Do you ask which is the earliest variety of Pea? Ah! that is a hard question. The earlier varieties seem to have entered into a combination not to give any one all of the credit. In 1882 and 1883, a distinct little blue Pea, sent out by Mr. Laxton, of England, under the significant name, "Earliest of All," led the van in my garden. Strange to say, the present season this ambitious candidate has to retire to the background to give place to eight successful rivals, of which the names are Cleveland's Rural New-Yorker, leading on June 18, followed by one planting of Dan O'Rourke, June 19, and Dexter, Kentish Invicta, Roedland, Shah of Persia, Thorburn's Extra Early Market, Landreth's Extra Early, and Ferry's Extra Early, on June 20. June 21 ushered in Bliss's American Wonder, Express, Prince Albert, Caractacus, Carter's First Crop, and Earliest of All. Next season, the list may read very differently.

It is to be remarked that the Prince Albert and Dan O'Rourke are comparatively old varieties. I may add also that another planting of Dan O'Rourke, the seed of which was imported from France, was not fit for use until June 25. Among the dwarf intermediates, I am much pleased with Pride of the Market, Stratagem, Market Garden, and Hair's Dwarf Green Marrow.

"ELM."

[The variations in the relative periods of ripening of Peas in different seasons, as stated above, form an interesting subject for experimentation; but it is not only in different seasons, but in different localities in the same season, that such changes take place. In our own garden, this summer, Express was the earliest, being fit for use June 21; this was followed by Cleveland's Impr. Earliest of All, June 23; the Rural New-Yorker, June 24; and American Wonder, June 25, all planted on the same day.—ED.]

MANURING WITH RYE.

Gardening requires a great amount of manure, and to meet with success one must make use of every available source. One of them, which is strangely overlooked, is Rye. As the result of many years' experience, I consider it more profitable as a fertilizer for gardening purposes than anything else. Its growth is made late in autumn, after most vegetables have been removed, and early in spring before the principal crops are planted; it furnishes the soil with an abundance of plant food, while it saves the expense and hauling of bulky fertilizers.

Three years ago I sowed an acre of Rye, which furnished a splendid pasture all winter until the first of the following April. On the 18th, when three feet high, it was plowed under with the aid of a heavy chain hung from the end of the whiffletree cross-bar to the plow-beam. A heavy drag was then run over the ground twice, furrowed and planted to Egyptian Sweet Corn. At first the soil was very hard to cultivate, but afterward it became loose and fine, and kept moist throughout the season. The Corn grew astonishingly vigorous, yielded the best crop I have ever raised, and the land still shows the effects of this manuring with Rye.

THOS. D. BAIRD.

ASPARAGUS FERTILIZER.

According to Dr. Gœssmann's analysis, the ash of Asparagus contains fifty per cent. of potash, thus plainly showing that wood-ashes, or potash in some other form, constitutes a most essential fertilizer for this most delicious vegetable.

The Fruit Garden.

SEASONABLE HINTS.

Strawberries.—Our last month's hints on "Extending the Strawberry Season" elicited several inquiries about the best selection of varieties, and we cannot answer these more practically than by giving the dates of ripening of the principal varieties growing in our grounds:

June 6.—*Crystal City.*
" 7.—*Crescent, Black Defiance, Garden.*
" 8.—*Duchess, Downer.*
" 9.—*Wilson.*
" 10.—*Miner, Lennig's White.*
" 11.—*Cumberland, Green Prolific, Hart's Minnesota, Jucunda, Cinderella, Seth Boyden, Hervey Davis, Red Jacket, Beauty.*
" 13.—*Bidwell, Warren, Longfellow, Capt. Jack, James Vick, Manchester, Golden Defiance, Great American, President Lincoln, Seneca Queen, Prince of Berries, Daniel Boone, Kentucky, Glendale, Col. Cheney.*
" 15.—*Jersey Queen, Finch's Prolific, Mrs. Garfield, Atlantic, Mt. Vernon.*
" 18.—*Marvin.*

The last berries were picked on July 15th, principally of Marvin, and a few Mount Vernon and Atlantic.

Crescent or Duchess for early, Cumberland or Charles Downing for main crop, and Mount Vernon or Finch's Prolific for late, will, for so small a collection, give satisfaction to the majority of people.

Raspberries and Blackberries.—There is no better season in the year for planting these than this month. They start so early in spring, generally before the ground can be brought into proper condition, and time be found for planting, that frequently they receive a serious check by the operation; while now they are dormant, and more care can be bestowed upon them. In fact, most plants and shrubs and trees may be planted to advantage in autumn, provided the ground is dry and in proper condition. In heavy, cold, or wet ground, spring-planting is preferable.

Evaporating Fruits.—To within a recent date the only means for disposing of abundant fruit crops that could not be sold profitably were the cider-press and the pig-pen. The great improvements made of late in the artificial drying of fruits and vegetables, however, have opened some new channels, and the time is not far distant when an evaporator will be found in every fruit-growing neighborhood, if not on every farm.

Our export of evaporated Apples amounts already to over six million pounds annually.

The process of evaporating fruits is exceedingly simple, and with ordinary care in the management of any of the improved apparatus failure is almost impossible. A good evaporator is one of the best investments that can be made on a fruit farm.

Plant a Grape-vine this month. If you have no Grapes at all, and have room for one vine only, plant a *Concord.* This is still the surest; but if you have room for more than one, try some of the newer and far better kinds in addition. *Worden* (black), *Brighton* (red), *Duchess* (white) are all excellent varieties, and succeed in any locality at all favorable to Grape culture.

PREVENTING FROST.

How far can the fruit-grower and gardener prevent frost? It is one of his most destructive foes. Early fruits and vegetables are always the most profitable; but frost opposes these, and not infrequently destroys the entire crop of fruit-buds, or even the trees and vines. Here, in the West, the orchardist must contend continuously against frost; it destroys more Apple, Pear, and Peach trees than all other agencies combined. Small fruits do not suffer so much, but frost frequently destroys their fruit-buds. Each year it menaces the early gardener.

It was the old theory that dew was condensed from the air, the earth being cooler than the atmosphere. But now we know that the dew is formed from moisture brought to the surface of the earth by capillary attraction and there condensed into dew by the cooler atmosphere. If the earth were perfectly dry, there would be no dew; and as frost is frozen dew, there would be no frost. We cannot make the earth perfectly dry, but we can reduce its moisture, and just as we reduce the amount of moisture in the ground will we reduce the amount of frost. We know that the amount of frost is in proportion to the amount of moisture in the ground; we know that on damp ground there is frequently a heavy frost, while on higher, and consequently drier, ground there is none. Fruits and vegetables in the first locality will be injured, while those in the latter will not.

This presents another point: It is not the low temperature of the air and ground, but the deposit of the frozen moisture, which proves injurious. The high ground and the air above it are of as low a temperature as—very likely of a lower temperature than—the low ground and the atmosphere above it; but the fruit and vegetables growing on the former are not injured. This shows how much we can gain by reducing the amount of frost; and the fact that the damper ground is covered with a heavier frost demonstrates that the frost comes from the ground, and not from the air.

It is plain that to reduce the amount of frost we must reduce the amount of moisture in the ground. The moisture in the ground may be reduced sufficiently to prevent frost without depriving the plants and trees of a proper amount of drink. The plants and trees on the high ground, where there is no frost, thrive as well as those on the lower, damper ground. It is not that amount of moisture in the soil necessary to sustain vegetable life, but its excess, which produces frost.

How, then, can we reduce the amount of moisture in the ground so as to nearly, or quite, prevent early frost? I answer, by thoroughly under-draining the ground. Land under-drained for Corn and Wheat has greatly reduced frosts; but such lands are not thoroughly under-drained—the drains are yards apart. Make them closer together, and frost will be almost altogether prevented. In comparison with the Wheat and Corn producer, the orchardist and gardener occupies so little land that he can afford to make the drains this close together.

Under-draining would reduce the amount of frost, not only by taking away the excess of moisture, but by more evenly distributing through the soil the necessary amount. Under-draining deepens the soil. Frosts are most often produced after a rain or snow has fallen, and the upper stratum of the ground is saturated. By removing this water from the surface, under-draining lessens the frost.

As under-draining in other ways fully compensates for its cost, the wide-awake gardener will hardly fail to avail himself of it. And we can take further measures to prevent frost, which at the same time give a full return by benefiting in other ways.

Of one of these only have I space to write. The more vegetable matter lying on the surface of the ground, the greater the frost. This is because the vegetable matter attracts moisture to itself, and also keeps the ground under it damp. This action is all the greater if the vegetable matter is decaying. My readers have noticed that there is often a heavy deposit of frost upon straw or vines, when there was none on bare ground near by. Therefore, the neat, tidy gardener who keeps his grounds clean will suffer less from frost than the slovenly man whose grounds are covered with decaying vegetable matter.

JOHN M. STAHL.

HYBRID RASPBERRIES.

Having read some statements that the possibility of hybridizing our different species of Raspberries is still doubted, the results of some experiments which I made several years ago may throw some light on this question.

During the years 1865 to 1867 I sowed seeds of black Raspberries taken from a field in which they grew together with white and red ones. Among the seedlings came up nearly a score which, when transplanted, shot up much higher than the rest, had red or purple canes and imperfect berries. But three of them were smaller, very prolific, with undersized red berries of pleasant flavor.

In 1868, moving to my present home, I took the best of these specimens with me. Here I continued the raising of Raspberries from seed much more extensively. I purposely selected seeds of the Miami Blackcap from rows adjoining rows of Hornet, Herstine, and Brinckle's Orange. The seeds of all of which I sowed; and among my numerous seedlings were many undoubted hybrids. The cross between the Miami and Brinckle's Orange was a curiosity. The bush was like its black parent, but much smaller and weaker. The berries were white, with the ends spattered over with black. I raised many seedlings from the red berries that these hybrids bore; they all seemed to have the same characteristics as their parents, and fully satisfied me as to their being true hybrids.

H. J. SEYMOUR.

OVERLOADED TREES.

A tree overloaded with fruit, P. Barry says, can neither perfect the fruit nor ripen its wood properly, and in a severe climate is quite likely to succumb to a degree of cold which, under proper treatment, it could have resisted. The Grape is very sensitive in this respect. It is safe to say that millions of trees are annually ruined in this country by over-crops.

THE AMBER QUEEN GRAPE.

This new Grape, now introduced by Messrs. Ellwanger and Barry of Rochester, N. Y., is described by the originator as follows:

"Bunch large, shouldered like the Hamburg; berry large, frequently oblong; holds persistently to the bunch; amber-colored at first, but grows darker, till it becomes a purple Grape; flesh tender, rich, and seeds small; plant a strong grower with thick leaves, somewhat downy on the under side. Fruit always eatable in August, and with proper care will keep all winter."

PICKING AND WINTER CARE OF APPLES.

Apples that are very fine when on the tree are often rendered almost worthless by being picked at improper times and by carelessness in their storage during fall or winter.

In some sections of New Jersey, those to whom tradition is the only guide say Apples keep best if picked from the tree at or soon after the full of the moon in the month of September. Such people are like the blind leading the blind, apt to fall in a ditch. Nature cannot be controlled by set rules as to dates for the picking of fruits. Apples should be picked as soon as the stem separates easily from the branch, the date of which will vary considerably in different years. The keeping qualities depend in a great measure on removing the fruit from the tree before the ripening process is far advanced.

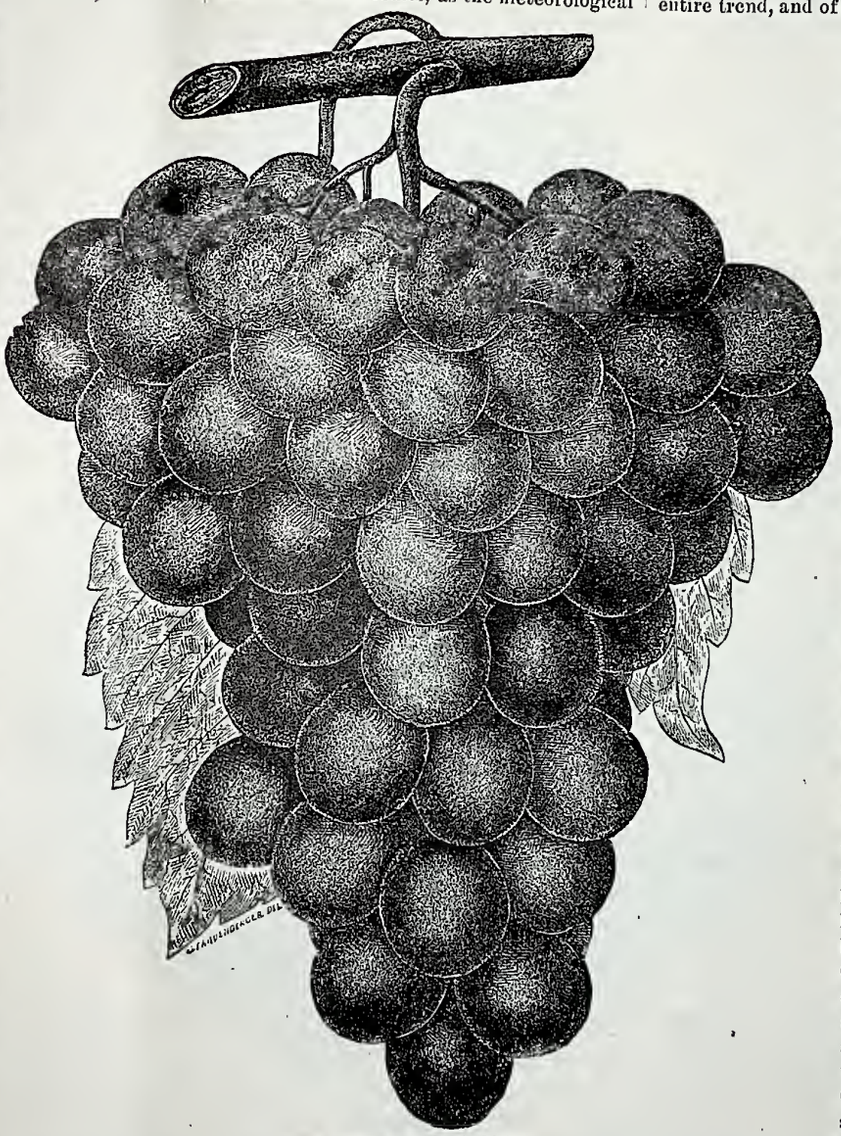
Handle with care, remembering that every blemish shortens the time of keeping. Place in good, clean packages suitable for storage. All of the so-called Russet varieties should be securely covered to exclude the air, and not be opened until needed for use, as the keeping of these depends upon having them completely protected against currents of air.

The place of storage is of equal importance. Opinions are divided as to whether fruit keeps best and longest when stored in dry or moist air. As dry storage is the method generally employed and best understood, that of moist will be considered. For several years I have stored Apples in barrels from which the air is excluded by a cover of boards somewhat larger than the opening at the head end just laid over the top. The cellar is that of an out-building with a dirt floor, upon which at times during the winter enough water will collect to become muddy. The barrels are placed upon stagings slightly raised, to keep the bottoms from the wet. The cellar is kept dark, and as near the freezing point as possible without freezing the fruit. I have had excellent success in keeping the fruit till very late in the season and with but little loss from decay. Those who adopt this method of storage think that the moist atmosphere retards the time of ripening.

In some respects, the present season has been a remarkable one; the latter part of July and the first part of August have been unusually wet—quite a contrast to the summers of many years past. Next winter's experience in storing Apples may, therefore, show different results, as the meteorological conditions of a season have a great influence on the keeping qualities of fruit.

The various natural defects inherent to certain varieties become also decidedly apparent by any process tending to retard the ripening of fruit. Climate, seasons, soils, and locations exert also powerful influences in this regard, and it is only by careful observation and experience that the peculiarities of each variety under given conditions can be ascertained. So, with me, the Baldwin Apple is subject to molding at the core, even when kept perfectly dry, and the more ripening is retarded, the greater this evil becomes; hence the variety cannot be kept very long by any process.

J. B. ROGERS.



THE AMBER QUEEN GRAPE.

THE BORDEAUX DISTRICT OF AMERICA.

Grapes of the most luscious kind grow in wild profusion in the Albemarle section, and the most valuable native species are indigenous to North Carolina. In an address before the Press Association of North Carolina, Mr. P. M. Wilson expresses the opinion that the Piedmont slope will be the Bordeaux district of America.

"A glance at any physical map of Virginia, North Carolina, South Carolina, and Georgia," he says, "will prove the wonderful advantages of situation that these States possess for Grape culture. A study of the geological formation of the slope along its entire trend, and of the chemistry of its soil, will satisfy the inquirer that every variety of soil, and of almost every grade of fertility, is furnished by this sweep of country, which is more than a thousand miles in length, and varies in breadth from fifty to one hundred miles. Meteorological observations, extending over a series of years, have demonstrated the mean climate to be all that could be desired for the growth of vines, and the fruiting and ripening of the various varieties of Grapes that are grown in this belt.

"Humboldt gives the thermal limits of profitable viticulture as follows: The mean annual temperature should exceed 49°, the winter temperature 64°, and the mean summer temperature 64°. These limits are at Bordeaux respectively 57°, 43°, 71°. In the middle section of the Piedmont region in North Carolina, where observations have been made in many localities by the State Geological Survey, the corresponding figures are 58°, 44°, 74°; and a very judicious French writer on this subject, Chaveronvier, has observed that the exceptionally good vintages correspond to the years in which a high temperature characterized the vintage months, while the thermometer ranged low in those years which were marked by inferior vintage; and it is well known that in our South Atlantic region the summer temperature usually reaches beyond the middle of September, so that the average for that month is 70°.

"The number of vineyards in North Carolina is already encouragingly large. The famous Tokay Vineyard, near Fayetteville, is the most extensive one in the State (and, indeed, the largest single vineyard in the South, if not this side of the Rocky Mountains), and whose fine native wines bore off the premium at the Atlanta Exposition."

The Flower Garden.

BELATED.

A single Buttercup I found,
  A star upon my weary way,
As summer closed her heated round,
  And ushered in the autumn day.

A little memory of May
  That slept too late, as I have done,
And so unknowing gone astray,
  And now stood lonely in the sun.

It seemed with anxious look to ask,
  Are all my bright companions dead?
Or have I slept, forgetting task,
  Until the lovely May has sped?

There waves around me autumn grain;
  I see the ripened Apples shine;
I feel the patter of the rain;
  I see the Grapes that blush with wine.

Ay, yes, I slept, I sweetly dreamed
  Of babbling brook and azure sky,
And in my foolish fancy deemed
  That flowers, like me, would never die.

From such a dream why should I wake,
  Afar and in another zone—
Wake, only that the heart may break
  To find myself alone, alone?

And this it is to live too long,
  To overpass our proper time,
And hear, instead of merry song,
  The bells of death in solemn chime.

So, too, with man: youth slept away,
  He wakes to find a useless age,
And wearily from day to day
  Drags out an aimless pilgrimage.

—*Harper's Weekly.*

SEASONABLE HINTS.

The first frost, which, in this vicinity, occurs generally in the second week in October, brings with it considerable work in the flower garden. All tender bulbs have to be lifted without delay, and prepared for winter storage.

Hyacinths, Tulips, Narcissus, and other *Dutch Bulbs,* although they may be planted at any time before the ground freezes, will do better if planted now, while the soil is still dry and mellow, and we trust that no reader of the AMERICAN GARDEN will let the month pass without planting a bulb bed, however small. To the lover of flowers nothing can equal the delight of watching and caring for his spring flowers, which will surely reward all the attention bestowed upon them with their fragrance and bright spring greeting.

There is not the least difficulty about their cultivation. They will grow in any good, rich garden soil mixed with some sand, and the only condition absolutely imperative to their success is that there is never, at any season, water standing about their roots. Artificial drainage is, therefore, necessary when the ground is not naturally free from standing water. In small beds, where an outlet is not easily obtainable, this may generally be accomplished by removing the soil to a depth of about three feet, filling half of the space with stones, covering these with a layer of sods and filling up with soil, adding plenty of well-decomposed manure, and raising the bed a few inches above the level. Large bulbs should be planted from four to six inches deep, smaller ones three inches.

GARDEN VIOLETS.

In our country, Sweet Violets, which should be the common treasure, are aristocratic flowers, seldom found outside of old family gardens, where they have bloomed for generations under the same hands, or in fashionable houses in winter, perfuming the air at half a dollar a bunch. Why they should be so reserved a flower it is hard to say. The Violet is a hardy plant, even in the ungracious climate of Boston, in whose suburbs are lovely old gardens, where the Box hedges and the Lily of the Valley beds and Violet borders have kept company for twenty years to my knowledge. How sweet it used to be to stroll in May afternoons past the old Watertown and Cambridge houses, where the Hawthorne showed its pink, and the Elms were in their veils of young green, and the air was soft with the odor of English Violets. I have always meant to deserve well of my country by having a large Violet bed, and stocking my garden so full of Lavender, Mignonette, and Snow-drops, Balm and other sweet things that they never could run out. If you wish to be well remembered, plant Violets.

The Violet is a blossom for all the year round, and there is not a month when one need be without fresh blooms of it from cold-frame, garden, or window-boxes. Planted in a shady corner of the garden, where yet they have an airy, well-drained nook, Violets will take care of themselves, with the kindness of a covering of dead leaves in fall. But they last so long and give such richness that the borders are worth preparing well. What the garden Violet dislikes most of all is standing with its feet in the wet, unlike the fragrant white wild Violet, which we find in meadows and bogs.

My Violet border is planned to give a succession of bloom the year round, the earth from the three-foot bed being dug out two feet deep, and the sides stoned up with rubble laid in mortar with which coal-ashes have much to do. This keeps the Violet roots from gadding, and from freezing, likewise. Nine inches of stone are filled in for drainage, with turf and some old pounded mortar above, to keep the earth from washing down, and the other foot is Violet soil—good strong loam for the basis, with liberal mixture of old barn-yard stuff, and the top leaf-mold, rich garden and sand with plenty of bone-dust, which Violets love. The border lies under the lee of a little wood which skirts the grounds, facing full south, but screened by tall plants the other side of the walk. Here the roots will spread into great crowns nearly two feet across, within the year, and every leaf will bear its blossom, one may say. In this favored spot one may feel sure of finding Violets in any month of the year.

In autumn, a wooden frame and sash goes right over the border; plants that have been growing in the shady corners of the garden are brought under cover, the old ones well enriched and half smothered in dead leaves, which are heaped around the frames, and the Violet season goes merrily into Christmas-tide. New plants are coming into bloom while the old ones are resting. They get their bone-dust, their weak tea of old leaves, old wood, and very old manure steeped in rain-water when the soil is very dry, and they do nothing but grow and blossom. Only one thing they ask—not to get too wet. You can hardly give Violets little enough water in cold weather. Only till the earth is dry several inches deep, need you water them, which will be once in two or three weeks. They will bear the sashes lifted in sunny noons, and warm winter rains for perhaps half an hour; but avoid letting them get drenched, or having any drip from the sashes. That brings yellow leaf and decay among the crowns.

Very few people know the varieties, even, of sweet Violets which enrich the border. The English, the Neapolitan, and some recall the new Russian varieties, are barely known by name; but you will hardly find one well-educated person, not a gardener by calling, who can tell the difference. As the sweet Violet, *Viola odorata,* is native in England, Russia, Italy, and throughout Europe and part of Asia, we may look for differences of interest in all.

Neapolitan Violets are pale, long-stemmed, and so fragrant that you think of Violet Attar in the room with a cluster of them.

Marie Louise is deeper purple, and a rich bloomer, which with care, in the open garden, starting early in a sunny, sheltered place, will give flowers in spring and autumn.

The English Violet is deeper purple still, and the standard garden variety for ease of cultivation and sweetness. Roots of this should be planted in every sheltered spot, under shrubbery, on light wooded banks, the north side of houses and arbors, wherever one wants the winds to be laden with sweetness.

The true *Russian Violet* is small; the *Czar,* large, deep purple, almost black by the side of others, and very sweet.

The Victoria Regina, a large, deep-hued, scented Violet, is not to be confounded by hearsay with the *Queen of Violets,* which is white, double, and large, vying with the *Belle de Chatenay,* inimitable for its tinged pale petals, which suit the snow-wreath Heliotrope.

The winter cultivation of Violets is easy, and they are the most charming of house plants, bearing dry air and neglect with more equanimity than many favorites, only dying of gas and overheating.

EAST DEDHAM.

THE COLEUS.

All things considered, I think the Coleus is our best bedding plant with ornamental leaves. Of course we have other "foliage" plants with finer leaves and more attractive coloring, but none with which I am acquainted so sturdy and self-reliant, so tractable and so little given to disappointing the grower.

The best new varieties that I have grown this year are *Retta Kirkpatrick* and *Velvet Mantle.* Retta Kirkpatrick is a very robust variety, with large leaves, considerably waved on the edges. The center of the leaf, and the largest part of it, as a general thing, is a creamy white; the balance of the leaf is a bright green, and the contrast between the two colors is very pleasing. The plant is not only an acquisition of great merit when used as a single specimen, but is even more valuable for bedding uses, as it forms a striking contrast to all other varieties of Coleus in which dark colors predominate.

Velvet Mantle is so much like the old Verschaffelti that I almost thought that variety had "turned up" again when my plant was small. But as it grew, I discovered that it was a finer variety. The leaves are very dark, of a purplish, velvety color, veined with dark crimson when given a good light, and when grown with Retta Kirkpatrick the effect is very rich and fine. To bring out the color well in the house, it must be placed near the glass and get plenty of sunshine. If not grown near the glass, the color will be neither maroon nor green, and not at all satisfactory.

Mrs. Garfield is a very fine variety, having a leaf with a large maroon blotch in the center, veined with pink and edged with green, with occasional markings of yellow. Harlequin is another very showy variety, being striped, blotched, and spotted with all the colors known to the Coleus tribe. It fades, along toward the end of summer, into pale tints that have a peculiar "autumn-leaf" effect, and it is then that I like this variety best.

I have always grown the Coleus in pots, in a mixture of ordinary garden loam, made quite rich with well-rotted barn-yard soil, and made light with sand. In such a compost the plants grow rapidly, but not too much, so as to be weak or spindling. Keep the leading branches pinched in, and you will never fail of having bushy, well-shaped plants.

To have good plants of the Coleus in winter, I take cuttings before frost. They root so readily that I stick them down anywhere until large enough to put in small pots. These soon make good-sized plants, and they help to brighten the window during a dearth of flowers. In March I cut the old plants up, and root as many new ones as I expect to use in the garden during the summer.

E. E. Rexford.

PYRETHRUMS.

If any one of our commonly grown hardy perennials may be said to have become improved of late, says *Gardening Illustrated*, from which the accompanying illustration is reproduced, it is the Pyrethrum, both single and double.

The varieties of each are numerous, and an inferior flower is now the exception. From pure white there are many ascending shades up to deep magenta, approaching crimson. Not less varied and bright in color are the single flowers, and the tints are generally soft and pleasing. There is nothing of the rigid formality of the Dahlia in the build of the Pyrethrum. It is true that the flowers are full and symmetrical, but there is an outer fringe of guard petals that saves them from being too formal. If any one will examine a flower of a double Pyrethrum they will observe that the outer edge is made of a zone or ring of florets, while the center is filled up with a very large number of short, quilled florets, and the thicker these are developed, the more double is the bloom.

PYRETHRUMS.
(Natural size.)

The single forms have one or two circular rows of large flat florets, much larger and broader than in the case of the double types, with a showy and striking golden disk. Both types are very pretty, and both have their special admirers.

To propagate Pyrethrums, they are divided in autumn and potted. By spring they have become well rooted and are then in good condition to plant out in the open ground. In order to grow a collection, it is best to plant them in a prepared bed of free, rich loam, made light and friable by digging, and further enriched by the addition of manure. The Pyrethrum strikes its roots freely into the soil; and the better it can do this, the more vigorous is the growth and finer the flowers. It is by no means difficult to cultivate, and is perfectly hardy if reasonably dry at the roots. It is wet which kills the plants far more than hard frost.

If the plants can be grown permanently in a bed, they can be better cultivated; they are greatly helped by some mulching in early summer, by keeping the surface soil stirred in hot, dry weather, by watering freely when necessary, and by giving a good surface dressing of manure and leaves in autumn, which can be forked into the soil in early spring just as the plants begin to make growth. Pyrethrums are very effective in the mixed border, and some clumps should be dotted about in association with kindred plants, but they cannot be cultivated so successfully as in a prepared and well-tended bed.

WINTERING ROSES.

To winter Hybrid Perpetual Roses in a climate where the thermometer occasionally indicates thirty degrees below zero is an important question. The principal aim of the grower should be to so ripen and harden the plants that, by the first of November, they are in a comparative state of rest. In this condition, and, if possible, just before hard, stinging frosts, take up the plants, cut out all soft, watery growth, sort carefully, tie up in neat, snug bunches of twenty-five or less, and they are ready for winter quarters.

Select dry, well-drained ground, dig two trenches, each a foot or more in width and about two feet deep, parallel to each other, leaving a wall of earth a foot wide between; pile all the soil that will stay on this middle division, the rest outside; then put in the bunches closely together, the tops meeting over the middle ridge. At the proper place put long stakes with name and number; throw in enough soil to thoroughly cover the roots, firm it down, take clean, long straw, covering completely all the exposed portions, fill in the trenches with remaining soil, on and against the straw.

Just before winter sets in, we finish by banking up with soil on both sides, entirely covering the plants, reminding one somewhat of Celery when banked up for the last time. —*S. T. Phoenix, before the American Nurserymen's Association.*

The Window Garden

AND GREENHOUSE.

WINDOW GARDENING FOR OCTOBER.

We should now be more fully prepared for winter by having all our tender plants ready to take indoors as soon as frosty weather or other occasion requires. Providing we can protect our Carnations, Geraniums, Fuchsias, Chinese Primroses, Cactuses, and other not too tropical plants on the piazza for a while, it is better not to introduce them to our windows. Although they may require a little protection at night, the warmth and genial weather of the day-time is far more beneficial to them than the indoor atmosphere of our dwellings. But in the event of severe weather, do not take risks by leaving your plants on the piazza, but take them indoors. Many house-plants, as Century Plants, Myrtles, Carnations, and Mignonette, may not appear to be injured by a few degrees of frost, but please remember, frost does not benefit any of them. And frost is far more injurious to plants after being potted than while growing out in the garden.

Besides, unless you are well acquainted with the nature and needs of your several plants, you may, in mistake, submit some of the tender ones, as Heliotrope, Coleus, or Poinsettia, to the cool treatment that an Orange, Sweet Bay, Verbena, or Meteor Marigold might bear with impunity, and find that the tender plants have been hurt. Therefore, be on the safe side, and keep all of your pot-plants from frost.

CLEANLINESS.

Before housing your plants, see that they are entirely free from parasitic insects. Buhach and other sorts of Pyrethrum powder may dislodge aphides and thrips, but if your plants be infested with red spiders, you had better wash every stem, branch, and leaf with a sponge and soapy water, using water unstintingly; if with scale, rub or scrape them off, but not so as to scratch the plant, then wash clean; and if with mealy bugs, brush them off. Fumigating with Tobacco smoke is very well in a greenhouse, but almost impracticable in a dwelling-house, notwithstanding stereotyped advice to the contrary. Besides, Tobacco smoke only destroys aphides and thrips, and has no visible injurious influence on red spiders, mealy bugs, or scales.

WASHING FLOWER-POTS.

No matter how fresh, and gay, and pretty your plants may be, if your flower-pots are covered with green, slimy confervæ, they will give an ill-look to your treasures, and cry aloud your own slovenliness. "It is too hard work to wash the pots" is worse than no excuse. I know precisely how hard, or rather how easy it is, and should not excuse any one who is not an invalid.

STAKING PLANTS.

If plants need support, stake them; but let your stakes be neat, not taller than the plants, and do not use more of them than are needed. So arrange the stakes and tyers that they shall not be conspicuous; but, if possible, hidden among the branches and leaves.

WATERING.

Callas, Cinerarias, Chinese Primroses, Carnations, and other plants that are in full growth require plenty of water, but so much as to render the soil sodden should never be given. Fancy and show Pelargoniums (Lady Washington Geraniums) starting into growth should not be watered much at the root, but slight sprinklings overhead encourage fresh growths to come from all the joints about the stem. Zonal Geraniums that have been lifted from the open ground need very little water, and they should be kept perfectly dry overhead till they get a fresh start. Cactuses and Century Plants need no water, providing they are kept in cool quarters. Evergreen plants, as English Ivy, Camellias, Azaleas, Oleander, and Oranges, if kept in a moderately cool place, need very little water; still be careful never to allow them to get dry, else you will hurt them seriously, even although they may not show it at the time. Ferns should be kept moderately moist all the time.

WINDOWS FOR PLANTS.

The north-facing, or sunless windows, will do very well for Chinese Primroses, Cinerarias, Calceolarias, Camellias, Azaleas, Ivies of all sorts, Begonias, Ferns, and Mosses; also, pots filled with rooted slips of Geraniums, Ageratum, Heliotropes, and the like for next summer's garden. East or west windows may be allotted to most kinds of plants, over which, if they wilt while the sun shines on them, a muslin curtain may be drawn in front of them. South-facing windows should be allotted to Roses, Geraniums, Callas, Petunias, Oxalis, Pansies, Heliotropes, Paris Daisies, and other winter-blooming plants that require sunshine to bring them into full blossom.

VENTILATION.

Do not coddle up your plants, with the idea you are doing them good. Let them have plenty of fresh air, by lowering rather than raising the window if possible; or, better still, if raised a little and lowered a little, too. But, at the same time, keep the door shut, as plants are sensitive to drafts and injured by them. In the event of a gentle, warm rain, set your plants, or some of them, out-of-doors, to get the benefit of it.

CHRYSANTHEMUMS.

What splendid flowers they are, so large, so bright, so gay, and borne in such extreme profusion! And how accommodating! As outdoor garden or indoor pot-plants they are amenable, and will repay the room and care they need. We may lift them from the open garden plots even when they are in flower, and pot them or transplant elsewhere in the garden with success. I grow them in summer in plots in the vegetable garden and orchard, and as my summer flower-beds have been emptied of their Geraniums, Coleuses, and other tender plants, I fill them up with Chrysanthemums. I also pot many of them. Those in pots I can stand closely together under an awning, keep them on the piazza, or any place that is warm and sheltered, take a few into the house or greenhouse, and thus secure all their blossoms. In lifting, secure all the fine roots (and this you can do better in dry than damp weather), pot or transplant immediately, and water copiously.

Wm. Falconer.

A GREENHOUSE FOR EVERYBODY.

Small, inexpensive greenhouses are increasingly in demand, and directions for their construction inquired about. If to be attached to the dwelling, the location, arrangement of the house and its rooms, and many other conditions, will naturally necessitate changes and modifications of almost any plan that could be given. But, after all, nothing can convey a clearer idea of their management than the description of actually existing, satisfactorily working structures of this kind. It is, therefore, with pleasure that we have received the following from Mr. N. T. Lackner, Astoria, N. Y.:

"My greenhouse, 12x3½, and 10 feet high, constructed by myself last fall, leans against two east windows of my house, through which the plants receive the necessary heat. The top sashes can be raised, and another window communicates with an airy cellar, so that complete ventilation can be given. Water drains readily through the ground, so that the syringe may be used freely whenever necessary. There is some space between the greenhouse and a fence in front, which I had filled out with hay up to the glass and covered with boards. This secured a temperature of from 40° to 50° all winter, which was sufficient to produce an abundance of flowers all the time, mostly from plants raised from seed. A Wistaria, which is inclosed, was in splendid bloom in December and again in February, deliciously perfuming the whole house. A Honeysuckle, which is also inclosed, had but few blossoms, and as it shades too much, will be taken out.

"When I built the greenhouse, I expected that it would make the room too warm in summer, and therefore arranged it so that it could be taken down. But at the approach of summer the whole structure, filled with bright colors and fragrance, gave the room so enchanting an appearance, that I could not bring myself to sacrifice it, and to my great satisfaction I found that it not only was not objectionable, but kept the room most comfortably cool."

POT-BOUND PLANTS.

After plants have been growing for a long time in pots or boxes quite too small for the capacity of the roots, the rootlets and fibers will form a thick mat all around the inside of the pot. Of course, as the roots cannot spread out, the plant will usually cease to appear as thrifty and luxuriant as the florist may desire. The remedy is to dump the contents of the pot and place them in a larger vessel. Prior to replanting, run a sharp knife up and down the mat of roots in half-a-dozen places about the ball of earth, so that new roots will strike out readily after the plant has been placed in a larger pot. It is a grave error to attempt to keep certain kinds of flowering plants in pots that are not one-fourth as large as they should be. Geraniums and Roses especially need pots of good size. Small pots tend to dwarf the growth of most plants, and unless, when used, liquid manure is applied frequently, but little satisfaction can be obtained.

S. E. T.

BULBS FOR WINTER FLOWERING.

Among all the many flowers for adornment of our apartments in winter, bulbs must always take front rank, not only on account of the ease with which they are cultivated, but also for their brilliant hues and exquisite fragrance. What can excel the perfume of Hyacinths, Lilies of the Valley, and Easter Lilies? And every one can raise them in profusion if they will plant them in due season and cultivate them properly.

HYACINTHS.

Hyacinths are the most desirable bulbs for winter blooming, and every one knows the richness of their fragrance and the beauty of their coloring. But some persons think them too sweet for parlor flowers; yet if they are put into the hall or an open way at night, their odors will not be too overpowering to the most delicate constitution. In fact, growing, healthy plants of all kinds are the most desirable adjunct for city and country houses as a sanitary measure.

The bulbs may be grown either in pots filled with sandy soil, or cocoa-nut fiber, or damp sphagnum, or in glasses of water, with a small bit of charcoal at the bottom to keep it sweet. The bottom of the bulb should just touch the water, which will soon evaporate, so as to be a little below the base of the bulb. A layer of cotton batting can be laid around the edges of the bulb within the glass, and kept moistened, so as to prevent the evaporation of the water.

If you desire to have your Hyacinths in bloom for Christmas, put them into pots or glasses as early as possible in October, and you will have a fine display. If required at Easter, plant them early in December or January. A large bulb will flower well in a small pot; but it is a better plan to plant three or six in large pots and produce more flowers.

After the bulbs are planted, put them away in a dark cellar for three or four weeks, or until their roots have struck far down into the glasses or pots, and their leaves are beginning to show themselves. Then place them in a sunny window, and keep the soil well moistened in the pots. A furnace-heated room of 73° or 78° is too hot for a good development of stalk and buds, so place them in an upper chamber where the frost will not touch them, and where the mercury rarely rises above 65°. Thus treated, they will grow finely and fully repay you for the little labor you have given them. If the stalk does not incline to shoot up well, twist a cone of white paper and place the wide part over the bulb, then cut off the top a little, and the buds will shoot upward to the light. Always water bulbs in pots with water quite warm to the hand, and once a week drop into it five or ten drops—according to quantity of water—of ammonia water.

Single Hyacinths will flower more satisfactorily in the house than the double varieties. Roman Hyacinths make a pleasing addition to a collection of bulbs. Their bulbs are smaller and cheaper than the ordinary Hyacinth, but the flowers and odor are almost as beautiful and delicious.

THE LILY OF THE VALLEY.

This most exquisite flower can be forced for the window-garden as easily as Hyacinths, Tulips, or Crocuses, while its waxen bells and rare perfume far exceed that of any other flower. After their leaves have become well dried off, dig up a large clump from the garden—if you are the fortunate possessor of a Lily bed—and plant them in sandy soil or moss or Cocoa-nut fiber, then dampen it well and place the pots or boxes in a cool place where the sun will not touch them, until you see the hooded leaves springing upward; now place in a sunny window in a well-aired room, not stiflingly hot, and in six weeks you will have lovely clusters of most perfect flowers. After flowering, take the roots from the pots and put them in the cellar, and as soon as the frost has left the ground plant them out, and possibly they may flower again. The florists keep pots of Lilies of the Valley started, for sale, and in purchasing a supply of winter-blooming flowers they should not be passed by. The roots can be dug up after the ground has frozen in December and be brought forward to blossom by Easter.

ROMAN HYACINTH.
(One-third natural size.)

THE BERMUDA EASTER LILY.

This Lily has not been long known to flower lovers, but it merits their recognition as a very beautiful Lily especially adapted to forcing for winter flowers, and for Easter decorations it is unequaled. Its flowers are of waxen whiteness, and trumpet-shaped, like *L. longiflorum*, of which it is a variety. It will continue in blossom from ten days to a fortnight, and a large bulb will give from eight to ten flowers, and in some cases as many as thirty flowers.

In Bermuda it bears a much greater number of buds and flowers, and they are much sought for in that flowery island. It will also bloom two or three times in succession, thus making it doubly valuable both to the florist and the amateur gardener.

A large bulb should be planted in a six or seven inch pot, filled with sandy, peaty soil, and set aside a little while to develop its roots, yet not in a damp, dark place. The culture of these Lilies should be the same as is given to the English White Lily, and *L. longiflorum*. Keep the soil duly moistened, but not too wet; and a sunny upper window would develop its growth, in the house, better than a heated atmosphere. After its flowers are well developed, it can be brought down-stairs for an ornament to library, hall, or parlor; but always place it in a cooler place at night, where it will not be chilled.

AMARYLLIS.

The Amaryllis will force finely for Easter flowers, and the new hybrids which have been raised by *M. Louis Van Houtte* and *M. Fouchet* are very beautiful for this purpose. Some of the flowers of these bulbs have a white ground, lined and striped with red and rose color, while others have red petals striped with white. *Amaryllis Johnsonii* is also a most beautiful bulb for the window-garden, and if planted in October, it can be made to bloom in glorious beauty by March. Its flowers are very large and of a most vivid red with a band of white through each petal. Several flowers are borne upon one stalk, and they are the admiration of all beholders, and cannot be too highly recommended to all lovers of winter-blooming bulbs. Tulips, Narcissus, Crocuses, are all desirable for house culture.

DAISY EYEBRIGHT.

Lawn and Landscape.

GROUPING OF SHRUBBERY.

Shrubs may be used to ornament a lawn in two ways, singly or in groups. Their charm consists in their rounded outline, their low, broad growth, and their bloom. If left to their natural development without other pruning than that of shortening in redundant growth, they all suggest the idea of concealment. This is preëminently the case with wild suckering shrubs, like Elders, Alders, Hazel bushes, etc., which hide the borders of forests and conceal swamps, stumps, logs, stone-piles, and Virginia fences from view with pleasing masses of verdure and gay flowers. Their more civilized congeners, Weigelias, Syringas, Lilacs, and many others, have the same habits, of which we cannot deprive them without making unnatural, hideous specters of them. They even maintain this character when grown singly.

The specimen Tartarian Honeysuckle, that graces and beautifies your lawn with its swelling outline, its wealth of tiny bloom and translucent fruit, may in its broadest development hide from your favorite window or porch a neighbor's barn-yard, with its array of wagons and sheds, its half-consumed straw-stack and manure-heaps. On the other hand, if improperly placed, a shrub or group may shut out a beautiful picture, as I once saw a group of Quince bushes hide from a sitting-room window an exquisite view of a miniature lake and a mountain-side beyond. The rounded contour of shrubbery eminently fits it for the curves of drives; and some of the most delightful effects in large parks and cemeteries come from the proper using of masses of shrubs.

Taller-growing shrubs might often be used to advantage in farmers' door-yards. In many cases the carriage-drive goes straight from the street to the barn-yard, revealing much that is not especially attractive. A graceful curve leading toward the house, while the direct line of vision became broken by a group of such shrubs as now encumber the front yard in unmeaning clutter, would be a gratifying change that many a farmer could afford to make just for the greater ease with which the surroundings of the house could be kept in order.

In grouping shrubs, those of upright growth and the habit of bearing their flowers on the topmost boughs are eminently fitted for the center, while the outer plantings should be of weeping or pendant forms. The taller Lilacs, the *Syringa grandiflora* and the Altheas, belong to the former, while the Weigelias, some of the Spiræas, and many others belong to the latter class. As a general rule large masses of shrubbery should, as far as practicable, be of the same genus, diversity being obtained by planting different species and varieties. In this way a group of Lilacs, for instance, can be made more effective than when only one variety is used, and with different species the defects of one may often be covered by the peculiarities of another. The double Altheas, for instance, are deficient in foliage and branches in their lower parts, which makes them unfitted for grouping alone; but set one in the angle of a fence or building, with a Golden Spiræa or Rose Weigelia in front, and you secure all that is beautiful in both, while occupying the room of but one.

Sometimes shrubs of marked beauty can be planted with an overgreen background, to the advantage of both; a Syringa or Red Dogwood in front of a Norway Spruce, or a *Spiræa prunifolia*, or *Deutzia gracilis* near an evergreen hedge, form beautiful contrasts.

Even shrubs of dissimilar habits look better in groups, when by that means the lawn is left with large areas of clean grass. Three shrubs that once nearly filled one side of a village door-yard were dug up, and small rooted slips of the same planted six feet apart in a triangular group near the gate. Now, after twelve years, they have grown into a pleasing group whose beauty is greatly enhanced by the unbroken grass-plot between them and the house. The shrubs were *Spiræa prunifolia*, *Pyrus Japonica*, and the Sweet-scented Syringa.

The nooks in shrubbery groups may often be used to advantage for planting herbaceous or annual flowers, as Cannas, Hollyhocks, or Pæonies. L. B. Pierce.

CONSTRUCTING ROADS.

Walks and paths are located and constructed either for utility or ornament. When for use entirely, they should be as direct as possible, without unnecessary windings or detours. When an adjunct to ornamental grounds, some people fall into the error that because it was once said "the line of beauty is a curve," all things crooked must be pleasing, and they lay out their avenues on this principle, the seeming excuse for a curve being that there is a corresponding or a worse curve somewhere else. At all points where avenues deviate from a direct line, there should be a close plantation or clump of trees, so that it may appear as the most natural thing for the detour to be made.

Water is the bane of an avenue; as ordinarily constructed, it saturates the earth, swells the subsoil, it clayey, when frozen, and leaves it a mortar-bed in a thaw. The two principal things for a properly constructed avenue are to resist the wear of travel above and the flow of water beneath.

The customary plan has been, after the location was decided on, to dig up the turf and loam, filling the shallow trench thus formed with any clean material that might be convenient, and to rake and roll the surface, which in spring becomes little better than a puddle. The result frequently is the substitution of a plank or concrete walk. Half the expense of either would have constructed a walk of equal width that would be smooth, hard, and dry at all seasons.

If a simple path is required, three feet in width is sufficient; but if it is wanted to be wide enough for two persons to walk abreast, not less than five feet will suffice. Cut a clean trench of this width from twelve to fifteen inches in depth according to the nature of the soil; then lay an inch drain pipe in the middle, care being taken to avoid sags in the grade, either of the walk or the drain, but when unavoidable be sure to have a sufficient outlet at the lowest point. Obtain good coarse gravel and screen it twice, using the coarsest for the bottom, the second next, and reserve the finest for the top layer. On the second layer put a thin covering of binding gravel, so called, which is simply a glacial drift, composed of mixed clay and sharp, angular, unwashed gravel, and packs firmly together, so as to be impervious to water. On this put the final coating of fine gravel and roll carefully and well.

Such a walk is not only cheaper than wood or composition, but will not decay like the former, or smell of the gas-house like the latter. The color of gray gravel and the absence of heat are much more agreeable to the eye and the foot than if the composition were used.

For an avenue the construction is substantially the same, but the excavation should not be less than eighteen inches deep, and should be lowest in the middle, where should be a drain pipe, increasing in diameter as we proceed from the highest part. The bottom half of the excavation makes an excellent place to deposit all the old walls and rough stone to be found everywhere in Massachusetts. This should be dumped carefully, and so disposed as to present a tolerably fair surface. On it lay screened gravel exactly as directed for walks, but use a heavier roller, and the avenue is completed. In selecting gravel, avoid all that has a washed or pebbly appearance, as it will never become compact.

Gutters not only give a nice finish, but prevent the continual wash of the margins. Catch-basins should be introduced at intervals, particularly at any change of grade, and connected with an underground drain, which in some cases should have a connection with the drain beneath the center of the avenue; but this detail must be specially studied, as it will vary with circumstances. The surface should be crowned slightly, only sufficiently to cause the water to flow away easily in a violent shower.—*Col. H. W. Wilson, before the Massachusetts Horticultural Society.*

THE BEST AUTUMN-FLOWERING SHRUB.

If we had to name the best spring-blooming shrub, a first choice among so many beauties might be hard, but among fall-bloomers the *Hydrangea paniculata grandiflora* stands supreme above all competitors, and, considering its many excellent qualities, it seems strange that it is still comparatively rarely found in cultivation. For small inclosures it is rather large, and not as well adapted as for large, open lawns, where its effect, especially when seen from a short distance, is really grand.

In a neighboring lawn, in full view from the window near which we write, and several hundred feet distant, stands a group of half a dozen large bushes in full bloom, completely covered with their large panicles of white and rosy pink. A superb specimen of *Abies Nordmanniana*, with its deep-green, glossy leaves, furnishes a splendid background; on one side stands a *Magnolia macrophylla*, which by the slightest breeze turns the under side of its monstrous leaves to view, giving a peculiar shining, glaucous tint to the entire tree. A little further distant on the other side is a beautiful, well-shaped Kentucky Coffee-tree, the tips of its branches just changing to golden yellow in pleasing contrast to the bluish-green of the main foliage. It would be useless to attempt to describe in words the imposing effect of this magnificent combination of rich colors and graceful forms, which, we fear, shows to better advantage from our window than from the proprietor's own grounds.

Foreign Gardening.

A GARDEN IN PARA.

Sunday in Brazil, as in all Catholic countries, is a great festa. Early mass finished, the rest of the day is given to pleasure. There are no excursions, no noisy and drunken revels, but all is quiet enjoyment,—walks into the country, rides in the horse cars, or visits to friends; often on great church festas music and fire-works in the evening; but very seldom, although crowds of people come together, the slightest disorder.

Let us, this lovely Sunday morning, visit the garden of our friend Senor Olinda, who is always at home on Sunday, and to whom a visit from any lover of plants is always welcome. The time is eight o'clock; coffee is over, and breakfast will not be ready till eleven, so we have three hours before us. The garden is just outside of the city in the precinct of Salvaterra, but yet only twenty minutes from the business center. The morning is perfection, like the loveliest June day, as indeed every morning in the year is in Para. Let us, therefore, take a less direct route, and walk out by the great Estrada of St. José.

We leave the Palace Square, with its large Mango-trees *(Mandigofera Indica)*, which at this season (August) are bright with the new bronzy leaves, and hanging full of the green, odd-shaped fruit, which in January will be bright yellow with a red cheek,—a fruit varying much according to the tree, the poor ones tasting like a mixture of tow and turpentine, the best more delicious than the choicest Peach,—and see before us the Estrada, with its long lines of Royal Palms *(Oreodoxa regia)*, the great fronds meeting over the broad street, and the columnar trunks seeming to converge in the distance.

On each side are houses and gardens; a short distance out is the once famous botanic garden, now, alas! utterly neglected, but still preserving many rare trees, and in winter a mass of bright-leaved Caladiums, chiefly *bicolor* and *Chantini*, the leaves of which grow to an immense size and are very brilliant. Many other Palms attract us, of which the Assai *(Euterpe edulis)* is the most graceful and beautiful and the ugliest; in fact, a Palm of which one rarely sees a good specimen is the Cocoa-nut *(Cocos nucifera)*.

Should we linger to describe all the bright, attractive plants that we meet, the various flowering vines which cover the fences, the White Pancratiums in the ditches, the Coral Erythrinas and the little Orchids and Tillandsias perched in the trees, we should never reach the garden; but an easy walk of half an hour brings us to Salvaterra, and we are at Senor Olinda's gate.

The house stands back from the road, with a little garden in front. The entrance is through a huge plank gate, with a little door cut out in the middle of it for foot-passengers, and the whole is covered by a tall structure supported on great posts, roofed with red tiles, and sloping inward nearly to the house.

As we enter, we see that the posts are covered with climbers; on one is *Clerodendron Balfourii* covered with masses of white and scarlet bloom larger than our hat; on another *Allamanda Hendersoni* full of immense yellow flowers; Jasmines of several kinds, which fill the air with fragrance; *Stephanotis floribunda* hanging with long garlands of white sweet-scented flowers; the Wax Plant *(Hoya carnosa)* with jeweled blossoms; some very brilliant species of perennial Convolvulus, Trumpet Flowers and Passion Flowers, the latter both with flower and fruit; the beautiful *Hexacentris Mysorensis*, with long pendant racemes of rich bloom,—and, indeed, many others. Blue is supplied by *Thunbergia Harrisi*, which, if not kept well pruned, would soon fill the whole garden, and pink by the lovely *Antignon leptopus*, the beauty of whose masses of rosy flowers no words can describe.

Trained along the whole front is *Cissus discolor*, which hangs almost to the ground in long streamers, and in the play of sun and shade shows a wonderful brilliancy of foliage. And all these are in bloom all the time; it is perpetual spring in Para, and beyond pruning off the too rampant branches, they require no care, save at times, when the afternoon shower does not come for several successive days, a little water in the morning.

The little front garden is a mass of brilliant foliage and flower. Crotons, Poinsettias, Dracænas, and Acalyphas are dazzling, and the Madagascar Periwinkle forms beds which are always covered with bloom.

There are Roses, but, beyond giving plenty of flower, the plants are not attractive, as in this warm climate they cannot be pruned, but must be allowed to grow at will, and Hybrid Perpetuals are six feet high, with flowers only on the end of the shoots.

The most striking plants in the front garden are a *Russelia juncea*, eight feet high, and at least three feet in diameter, which forms a fountain of Coral Flower and delicate spray, and an *Alocasia macrorhiza variegata*, which has great white leaves, three feet long by two feet broad, on tall foot stalks.

A long fence is a blaze of Bougainvillea, many of the shoots ten feet high, rich masses of color, and, just beyond, an *Ixora cuneata* is even taller and covered with crimson blossoms.

On our right is the house, the windows full of Tydaeas and Achimones covered with flowers, and before us stretches a path shaded by Orange-trees, the branches weighed almost to the ground with fruit, and with borders on each side full of choice flowers and plants. All the trees are hung with Orchids, many being in bloom; but here we must divide our letter, and at present only write of the flowers and foliage plants, reserving a description of the Orchids for a future time. E. S. RAND.

AN AUSTRALIAN DROUGHT.

In February last, in New South Wales, a correspondent of a provincial newspaper traveled for some two hundred miles by railway, and throughout the whole journey he saw on either side nothing but a desert—"a wilderness destitute of any green thing, without any water worthy of the name, of cattle in the paddocks, dead or dying; the sun's scorching rays fell on fields as hard as iron. The leaves of the trees were as motionless as death itself, there being not a breath of air stirring. The state of affairs was quite as bad in other parts of the country. There were thousands of square miles of land, baked and cracked, with the dry, brown grass flying off in dust, without a vestige of green, or a drop of water anywhere."

The expedients resorted to in this terrible crisis were sometimes of a most desperate character. Some farmers endeavored to send their cattle down to the coasts or to the towns, but they died on the road, and their owners had to bear not only the loss of the animals, but the cost of their conveyance. This double loss largely prevented others from imitating their example. They sat down in mute despair to watch their ruin. One man lost twenty thousand, another fifty thousand, and the third one hundred and fifty thousand sheep, without the slightest power to save one of them. Millions of sheep have died, and hundreds, and probably thousands, of colonists who were prosperous last year are poor and, perhaps, ruined to-day.—*Scientific American.*

MADEIRA AND ITS VINTAGES.

This island, in consequence of its peculiarly rocky, volcanic soil, and the remarkable evenness of its climate (varying only between 60 and 80 degrees), is in truth "The Home of the Vine." Its wines have that specially rich, nutty flavor, which has given them a world-wide celebrity. They were for the last two decades partially forgotten, on account of the almost total failure of the vintages (1851 to 1861); but the late series of full vintages have again given them the prominence their sterling qualities deserve—the demand having trebled within a year. The old-time practice, so universally followed by well-to-do people, of laying down a pipe or more of it from time to time, is again being practiced.

History informs us that in the good old days before the Revolution, it was the custom of John Hancock, and other merchant princes of Boston, on great occasions, to roll out a pipe of this grand old wine on the Common, and allow the people to imbibe at will.

1813, 25,000 pipes; 1814 to 1846, gradual increase to 31,500 pipes, thence a gradual decrease to 1851 (on account of disease of the vine) to 10,000 pipes.

1852 to 1861, very small; 1861 to the present year, gradual increase from 400 pipes, to 14,000 pipes in 1874. The vintages of 1879 to 1882, reaching 20,000 pipes.—*Wine and Fruit Grower.*

A VEGETABLE BOUQUET.

Quite a novelty in the way of a bouquet was produced by Mr. Aldous, florist, of South Kensington, states the *Gardener's Chronicle.*

A lady was desirous of presenting a gentleman with a bouquet—this being the ladies' privilege in leap-year—and gave the order that culinary vegetables only were to be employed in its fabrication, which was tastefully carried out. It consisted of the following items, in their smaller forms: Carrots in two shapes, long and short; Radishes the same; Brussels Sprouts; variegated Scotch Kale; Curled Endive, and the broad-leaved Batavian variety, Parsley being used instead of the usual Fern fronds seen in ordinary bouquets. The whole, including the holder, measured fifteen inches in diameter, and was mounted in the usual way with wires.

Rural Life.

VILLAGE IMPROVEMENT SOCIETIES.

It is the fashion in these days to study institutions and trace them back to their beginnings, however remote. New England town-meetings, Virginian parishes and counties, are all connected with English and even with Germanic institutions. Slow evolution has been the law with whatever has been worth the attention of civilized communities.

Now, when the historians of various American institutions have completed their investigations in social and political departments, they can assuredly find an interesting chapter yet to be written about the evolution of the Village Improvement Society idea on American soil. With the proper sort of fostering care it is quite possible that a national society of great usefulness and significance may yet spring from this germ.

It was about twenty years ago that the ladies of a quiet Massachusetts town met, and determined to do something for the good looks of their streets. They were no dreamy esthetes, but a group of practical and very-much-in-earnest American women. Their ideas of village beauty grew steadily, they improved the appearance of the town in a multitude of ways, by better fences, better roads, tree-planting, street-lighting; every householder in the place felt the presence and inspiration of their work, until the modest little town became a model of a place, and the joy and pride of its inhabitants, and the fame of it went abroad, and other towns began to think of Village Improvement Societies.

Only twenty years, or so, have passed and there is hardly a State in the Union where some organization of the people themselves has not taken the matter in hand. Away over on the Pacific Coast towns in Washington Territory, Oregon, and California have adopted the plan. One of the most successful has grown up in Berkeley, under the shadow of a university of California, where many of the wealthiest and most refined citizens of the metropolis of the State are building residences. There, so mild is the climate and so fertile the soil, an immense range of arboreal growths is available for decoration, and for utility in street and garden.

But few are the villages founded where something cannot be done in the way of suburban improvement and tree-planting. It will be long before Angofosta and Hammorfest have Village Improvement Societies, but the dreariest sight in the midst of Nebraska plains or Colorado Cacti needs only patience and energy to become an oasis, a refuge city in the wilderness of neglect.

The natural province of such societies is in the line of outdoor work. They are to clear away the rubbish, the piles of tin cans, the deserted and ownerless "shanties," the waste-heaps of camp or village. They are to secure wide streets and roads, and space for public buildings, and ample squares, or commons, where people can assemble and children play, and where trees, vines, shrubs, and flowers may be planted. They are to interest all property-holders in the usefulness and practicality of their scheme, so that no one wishes to do anything to injure the good-looks of the place. Rustic seats they can build by the road-side at shady spots; springs they can wall up, and streams they may wish to bridge; sooner or later the work they have in hand will be acknowledged by young and old to be of a cash value to every industry in the place. Men will at last be educated to perceive that to build an ugly house, to neglect one's private garden or fences, to cast rubbish in the street, are all infringements of the unwritten harmonies of the village.

In the long run an active, enthusiastic Village Improvement Society is quite able to drive out the corner groggery, and break the bottles of fusel-oil, and ruin the occupation of the drunkard-maker. Lovely, peaceful, refined homes, and such a horticultural atmosphere of growth that to the poorest washer-woman's family the committee of the village improvement society give flower-seeds—these are more than a match for any disintegrating social influence.

The active society, too, is apt to have a care to new enterprises, to the condition of factories and workshops as fast as they are established, to the prompt removal of public nuisances, and to a multiplicity of questions relating to sewerage and drainage. For it is more than the mere loveliness of the village; it is its health, its general welfare, its daily needs, which concern such an organization.

The old New England town-meeting is not a national institution. But if every village that really suffers for the lack of social organization could have an "Improvement Society," something more than tree-planting might come from it all. There might be reading-circles and literary associations, night-schools and social assemblies. The love of a garden, of an avenue of street-trees, of a picturesque public square, might lead an entire community into more unselfish and loving relations as neighbors and friends. It might protect the ancient Oaks and Pines of the region, and gather up the fast-fading traditions and records of the early history of the community. It might go far toward destroying the dullness of village life. It might even give that life so sweet and beautiful an aspect, so deep and lasting a charm that over-worked, brain-tired men and women would learn to seek it as a shelter, and love its old-time simplicities, and its gentle refinement. It certainly seems as if in that organization known as the "Village Improvement Society," lie great possibilities of good to all rural communities throughout America.

CHARLES HOWARD SHINN.

THE RIGHT SPOT.

One of the most important points to be settled by those who are about to build, and after the lot has been chosen, is to determine the exact location of the building upon the site. We refer, of course, to the open lots on which there is room not only for the building, but for more or less spacious grounds upon all sides. On such ground the altitude, the distance from the various boundaries, the relation to other buildings, to the street and to trees, present or future, are all matters that should not be carelessly established, and, although there are special circumstances for each case, there are certain general points of universal application in all village, suburban, and rural building.

Nothing is easier than to make a grievous mistake by placing a house too low, too high, a few feet too far in one direction or another. Nothing is more difficult to correct than such a blunder. Tastes differ in this, of course, as in everything else, and no definite rules can be given, but certain cautions may be observed,—for instance, in fixing the guides which are usually placed at the level of the first floor it is well to remember that the actual front wall of the house, especially if it is of considerable height, will appear much nearer the street than do the stakes or boards that indicate its position. The wall seems to move forward as it rises. Similarly the underpinning, that is, the wall below the level of the first floor, seems less in comparison with the height of the structure after the whole is completed than when there is only a single board or line to show its altitude. There is, therefore, reason for the popular notion that there is no danger of setting a house too high or too far from the street.

Trees are often allowed to crowd a house into an unfavorable location. A beautiful tree of large size and healthful growth ought not, indeed, to be sacrificed for an inferior gain; but when, in order to spare it, the finest views from the house are lost, the sunshine excluded from the windows, and the approach thrown into an inconvenient shape, the loss is on the other side, and the gain consists in destroying the tree. Especially is this true in regard to trees of moderate size, which can be removed, or, in a very few years at most, replaced by others.

We have in mind a row of four Elm-trees that were transplanted from the nursery five years ago. Two of them measure thirty-five inches in circumference at three feet from the ground and the other two forty inches. They are about as many feet in height as inches in girth, and have a corresponding spread of branches. With such possibilities as that in the way of tree planting and growing, it is manifestly absurd to set a house where it will be forever in the wrong place, in order to save a tree for which, if it cannot be spared, a substitute can easily be found.

Keeping a house as near the ground as possible for picturesque reasons may be justified under certain conditions, but it commonly involves sanitary dangers which ought to be avoided, even at the expense of proud humility and lowly picturesqueness.—*The Builder.*

THE REAL HOME.

"What makes a home," remarked the late Doctor Holland, "is the light of love kept constantly burning on its altar, and which welds the tender, sacred ties of the family. Persons who are too busy with the daily affairs of life to find time to adorn and beautify their homes will soon permit the lamp of love to burn low and dim on the altar of their hearth-stones, and then, blindly ignorant of the cause of their unhappiness, they bewail at their lot and marvel at their own wretchedness. The way to be happy is to make your home beautiful and attractive, within, of course, the limits of the means at your command. Intelligence, love, and refinement cannot be found in a home where there are only bare walls and floors, where there are no books or papers on the table, no flowers in the yard, and no music in the hearts of its inmates."

Exhibitions & Societies.

NEW-YORK HORTICULTURAL SOCIETY.

The monthly exhibitions of this society were resumed last month, and will be continued during the winter, every first Tuesday of each month, at Horticultural Hall, 26 and 28 West 28th street.

The September exhibition, although it did not present anything unusually meritorious, contained a good variety of all the seasonable flowers, and was fairly attended.

AMERICAN INSTITUTE.

The Fifty-third Exhibition of the American Institute was opened on Wednesday, September 24, at the Exhibition Building, Third Avenue, between Sixty-third and Sixty-fourth streets. Although all the machinery is not yet in working order, there is no doubt that the exhibition will be one of the best ever held by the Institute.

A special Fruit and Flower Exhibition will be held from October 8th till 11th; a Geranium Exhibition from October 15th to 17th; and a Chrysanthemum Show from October 29th to November 1st.

THE NEW ORLEANS WORLD'S EXPOSITION.

The opening of this exhibition, in many respects the most important one ever held on this continent, has been decided upon December 1st, 1884. The exhibition will continue during the winter to May 31st, 1885. The directors, in announcing the establishment of the Northern head-quarters at corner Broadway and Chambers street, New-York, take occasion to draw the attention of manufacturers to the great influence this exposition will no doubt exert in creating new outlets for our surplus manufactures.

On the continent south of the United States, are fifteen Spanish-American republics, the Portuguese-American Empire of Brazil, and four European colonies. They have a total population of 40,000,000 consumers, and an area of about 7,500,000 square miles, or more than double that of the United States. In climate, resources, products, supply and demand, they are the reverse and complement of the United States. Commercial exchanges with such countries are, therefore, in accordance with sound laws of trade and political economy. They are exceedingly deficient in manufactures. They need our railway iron and supplies, farming implements, cotton and woolen goods, boots and shoes, and a thousand and one products of our invention and skill.

Their total annual imports are over three hundred million dollars in value. Of this demand we supply but one-seventh part, the rest being monopolized by Great Britain, France, and other European powers.

Of our total exports of all kinds, eighty per cent. go to Europe, and only five per cent. to the fifteen American sister republics. Europe is well supplied with manufactures and has a surplus for export, hence we need not look there for adequate outlets for our surplus manufactures. We should rather look to the unsupplied markets of Spanish and Portuguese America.

Household Pets.

FERRETS.

The Ferret is a useful animal, which makes it more attractive than when kept only to look at. It is very useful for hunting rats and rabbits. The general feeding of Ferrets depends upon their use. The staple food should be bread and milk, or mush and milk, morning and evening, as much as they will eat up clean at the time of feeding, and no more. Raw animal food should be given them once or twice a week. This is the proper feeding when kept for rabbit-hunting; but if the Ferret is kept for rabbiting, it should be fed raw animal food at night, omitting the bread and milk. Keep water constantly before them. If they become too fat, dilute the milk, feed them with water so the feed will be sufficient in quantity but not so rich. They should always be eager for their regular meal.

They should be handled from the time they are placed before the feed-cup. Never tease them, as it tends to make them snap at everything that moves before them. If they take hold with their teeth, do not pull away from them, but push toward them—then they will let go. If necessary, put on thick gloves and let them bite. In a short time they will learn to be handled without gloves. To take hold of a Ferret that bites, hold a piece of meat before it; when it takes hold of it and pulls back, it can then be grasped around the neck, close to the head, and about the front legs; then it cannot bite. Handle them often, as frequent handling will make them tame.

Ferrets will hunt when four months old. It is their nature to hunt and kill; hence, if properly fed, they are not apt to suck the blood and lay down and sleep, but will continue to hunt until tired out. Begin with young by giving them half-grown rats. The first encounter with the rat is very important. Place the rat in a room where it will have a place to hide, put in the Ferret, let them have full sway, and hunting begins at once. When the Ferret has caught and killed one or two rats, he may be considered ready for outdoor work. The small Ferrets are the best for ratting.

It is always essential to the successful breeding of Ferrets to provide a suitable place for their habitation. Ferrets cannot endure the extreme cold, and should have a hutch constructed so as to regulate for cold and heat; the front of hutch can be made of lath or wire. They are very cleanly animals, and will use one corner of their hutch for excrements; clean their hutches twice a week, and use sawdust, or something of that kind, for litter, and give a clean bed of straw each week. Keep each matured Ferret in a hutch by itself, except in fall and winter; after the breeding season is over, then more can be kept together. The habits of the Ferret are nearly like those of the dog in breeding; they usually have from four to eight at a litter, and one or two litters a year; they go with young six weeks. A few days before it is time for the female to litter, give her a good nest of clean straw. More people should keep Ferrets, as they are sure to clean the premises of rats.—*H. E. Spencer, in Pease's Feathered World.*

Miscellaneous.

THINGS THAT NEVER DIE.

The pure, the bright, the beautiful,
That stirred our hearts in youth;
The impulse to a worldless prayer,
The dreams of love and truth—
The longing after something lost,
The spirit's yearning cry,
The strivings after better hopes—
These things can never die.

The timid hand stretched forth to aid
A brother in his need,
The kindly word in grief's dark hour
That proves a friend indeed—
The plea for mercy, softly breathed,
When justice threatened high,
The sorrow of a contrite heart—
These things shall never die.

The memory of a clasping hand,
The pressure of a kiss,
And all the trifles sweet and frail
That make up life's first bliss.
If with a firm, unchanging faith,
And holy trust and high,
Those hands have clasped and lips have met,
These things shall never die.

The cruel and the bitter word
That wounded as it fell,
The chilling want of sympathy
We feel but never tell—
The hard repulse that chills the heart
Whose hopes were bounding high,
In an unfading record kept—
These things shall never die.

Let nothing pass, for every hand
Must find some work to do;
Lose not a chance to waken Love—
Be firm and just and true,
So shall a light that cannot fade
Beam on thee from on high,
And angels' voices say to thee—
These things shall never die.

—*All the Year Round.*

WEATHER FORECASTS.

It seems to be overlooked by meteorologists, says a writer in the *Journal of Science*, that when a season has taken a decided character, whether as wet or dry, the ordinary indications of change seem to lose their meaning.

In the year 1879 all signs of fair weather drawn from the appearance of the clouds, the actions of birds and insects, etc., were quite misleading. And in the present season I have more than once seen the commonly accepted signs of rain go for nothing. The sky may become gradually overcast, with dark, ragged masses of underscud; there may be a "hollow and a blustering wind," swallows may fly low, slugs come out in numbers, bubbles of gas rise from ditches, etc., but the weather remains dry, or, at the most, there is a slight shower.

INGENIOUS IDEA.

It is told of a man in Connecticut who wanted to put a water-pipe through a drain several feet below the surface of the ground without digging up the drain: To accomplish it, he tied a string to a cat's leg, thrust her into one end of the drain, and giving a terrific "scat," the feline quickly appeared at the other end; the pipe was drawn through the drain by means of the line, thus saving considerable expense.

IN A MEXICAN KITCHEN.

A Mexican kitchen is a study, and to do it and all its queer utensils justice would require a column's space. There are no cooking stoves in Mexico, or even anything like the fire-places of our grandmothers' days. One side of the room is occupied by a sort of shelf, built into the wall about breast high, in the center of which a small wood fire is kept burning.

There is no wood here which a New England housewife would consider fit to burn — only the gnarled and twisted branches of mountain trees, and around a little heap of these the earthen cooking-pots are ranged. If the family is small, sometimes this smoky process is improved upon by building a charcoal fire in a large earthen pot, and setting the smaller cooking vessels within it. In many houses a mud oven is built at one end of this shelf, or somewhere out-of-doors. To heat the oven, a fire must be built inside of it, and the entrance closed with a hot stone. However, as baked food — "pies and things," according to the Englishman's advertisement — enters not into the household economy, an oven is altogether a superfluous luxury.

In the center of the kitchen stands its most important factor, the metate for tortilla-making. It is a hollowed stone, the size of an ordinary bread-bowl, having two stone legs, about six inches high at one end, which inclines it at an angle of forty-five degrees. The tortilla-maker kneels on the dirt floor at the elevated end of the metate, and the Corn, having been previously boiled in weak lye, and still quite wet, she crushes into paste with a stone rolling-pin, the mixture gradually sliding down the inclined plane into a dish placed to receive it. When a quantity has been thus crushed, it is rolled into balls and left until required. It is astonishing what an amount of Corn a family of ordinary size will consume in a day, in the form of tortillas, the Mexican "staff of life."

When a meal is on the tapis, the last act in the drama — the tragedy, we feel inclined to say, when suffering the pangs of indigestion — is to heat the griddle, or more commonly a smooth flat stone. Then the cook takes a very small lump at once of the prepared Corn paste and shapes it into thin round cakes, with a little water and much loud patting of the hands. The cakes are then baked brown in a jiffy, and as a substitute for bread, one might go farther and fare a great deal worse than subsist on tortillas.

Whatever else American housekeepers may find worthy of imitation in Mexican methods, I am sure that dish-washing, as that disagreeable duty is practiced here, will not be one of them. The Mexican dish-washer does not bother with a table, and thereby saves her arms from scrubbing and her legs from standing, but seats herself serenely on the floor beside a pail of hot or cold water. She has no soap, but a little sliced amole root makes stronger and cleaner suds, and in lieu of a dish-cloth she uses a tiny broom-brush, like our smallest whisk-brushes. The dishes are never wiped, but are turned up to dry, sometimes in a tray or on an adobe shelf, but generally on the hard dirt floor leaned against the wall. Strange to say, they always come to the table clean and shining. But fancy their condition if the average Irish or negro servants were allowed to do likewise!

The brass spoons and steel-bladed knives are kept bright enough to see your face in, though no bath-bricks or patent soaps are employed in their polishing — nothing but pure, unadulterated dirt. The servant whose duty it is, takes them out-of-doors, kneels upon the ground, digs up a little fresh earth, and holding the knife or spoon firmly on a stone, polishes at her leisure. Despite dirt floors and the absence of all those conveniences which we consider indispensable, I have never yet seen an untidy kitchen in Mexico. Everything is kept as bright and fresh as hands and amole can make it, even to the cooking pottery, which is of necessity smoked black whenever used. If we could combine their innate neatness with our improved methods, the result would be that cleanliness which we are told is "akin to godliness."—*Pansy.*

THE POPCORN TRADE.

The high price of Corn has somewhat discouraged the manufacturers of Popcorn, who are compelled to pay increased money for their product while disposing of their goods at almost the same figures as obtained when Corn was low. One manufacturer in New-York manufactures as high as 70,000 pounds of Popcorn a year. He has now on hand a single contract for shipping 1000 barrels to London. Shipments are made regularly to Hayti, France, Germany, Japan, China, and Italy. The Italians prefer it to Macaroni, and are heavy consumers of Popcorn.

"Many physicians," said the Popcorn man, "are recommending their patients to use Popcorn as a cure for dyspepsia. Several parties who are passing the summer in the Catskills have shipped a quantity by direction of their medical adviser, and go about munching it at all hours of the day. It is easy to carry about. Ladies can carry it in their dress pockets, and gentlemen can put it in their coat-tail pockets. No danger of soiling anything, you know. Children all like it and cry for more. It is far preferable to molasses and other candy."

All the manufacturers of Popcorn have grown rich. There are but nine in New-York. Newark, Jersey City, San Francisco, and Chicago all have one. There is one in Quebec, Montreal, and Toronto. Two men in Lowell, Mass., made independent fortunes in the business. One in Springfield, Mass., distinguished himself in the same manner.—New-York *Mail and Express.*

EATING HOT BREAD.

What to eat and what not to eat is a question every one should be able to answer for himself. What would kill one person may not hurt another in the least. A person in good health may eat and thrive on what would injure him if not in robust health.

The *American Miller* thinks hot bread very injurious. It says: "That hot bread, in nine cases out of ten, will produce dyspepsia is no newly discovered fact, and especially is this terrible result sure to follow persistent indulgence on the part of those whose pursuits are quiet, indoors, and sedentary. And yet the reformers, or those who call themselves such — the men and women who work themselves into a white heat over the sale of a glass of cider — will go on year after year not only making no outcry against this pernicious indulgence, but actually filling themselves up, day by day, with the hot and poisonous gases of the oven. This servant of the housewife can be made as terrible a stomach-destroyer as the distillery, and the sworn foes of the latter are apt to be its best patrons. Dyspepsia paints the nose and sours the temper as dram-drinking, and many sufferers from the former, though by their own willful acts, inveigh the most loudly against the latter."

It is nothing new to find "reformers" among those who have not reformed themselves. But all grown persons should have knowledge enough to know, and courage enough to practice, what is good for themselves.

RATS IN CELLARS.

"Shortly before winter, as the stores go to cribs and cellars," says Blaircc, in the *New-York Tribune*, "young rats, raised by careful mothers in hollow trees or other safe and sheltered corners, busy themselves looking for winter quarters where there will be defense from cold, and where food will be at hand.

"When a cellar is stored with fruit, vegetables, etc., it is very difficult to drive out rats, and the damage they do in such a place is enormous. All the finest fruits are soon bitten into, defiled, and spoiled. A little anticipatory care, to prevent their establishing a colony, pays well. The openings for ventilation should have rat-proof screens; the floors and walls should be searched for holes; empty barrels or boxes moved, holes stopped with glass and mortar, and a fresh coat of whitewash given. If doubtful places remain, a good sprinkling of copperas and lime is hateful and deterrent to these troublesome animals. If from any cause the cellar itself cannot be made secure, choice samples of fruit may be kept safe in old tin boilers or similar vessels, or in boxes suspended from the joists above by wire hooks.

"The rats that go out to form new colonies are mostly young, and much more easily caught than older ones. If fed for two or three nights on a tray of sawdust a steel trap placed in the tray will not be seen or suspected, and will generally catch and hold at least one marauder."

HOW TO MAKE "KOUMISS."

The word "koumiss" is the name of the favorite beverage of the Tartars. It is sometimes called "Russian Milk Champagne." It is a pleasant drink, and is particularly recommended for dyspeptics. Young children can drink it freely without harm. *Food and Health* gives this recipe for making it: "Into one quart of new milk put one gill of fresh buttermilk and three or four lumps of white sugar. Mix well, and see that the sugar dissolves. Put it in a warm place to stand ten hours, when it will be thick. Pour from one vessel to another until it becomes smooth and uniform in consistency. Bottle and keep in a warm place for twenty-four hours; it takes thirty-six in winter. The bottles must be tightly corked, and the corks tied down. Shake well five minutes before opening." A teaspoonful of yeast may be used in the absence of buttermilk.

HEATING GREENHOUSES.

The heating apparatus best suited to the wants of the amateur is the ordinary hot-water circulation from a boiler about four feet below the level of the house floor, in a well-drained cellar, at one end of the glass, and covered by a shed or office, which, being always warm, will be found a convenient workshop in cold weather. The boiler should always be a size larger than the pipe-fitters advise, to make sure of being sufficient. Much will depend on the draught of the chimney; the same boiler will do twice as much work with a good draught as with a low and small chimney.

To maintain tropical heat in the compartment eleven and a half feet wide and nine feet high will require six or eight four-inch pipes, while the portion devoted to hardy plants will not need more than half as many. In heating, much will depend on location and the shelter afforded by hills and trees on the north and west. The compartments on the north will require about four pipes, and in the portion devoted to the cutting-bench two will pass under the bench, and be so inclosed as to give bottom heat to the cuttings.

An abundant supply of water is almost as important as heat. If the public water-works do not afford this, it may be raised from a well or cistern by a windmill, to a tank fifteen or twenty feet high in the loft of the boiler-house. It is desirable to have it slightly warmed for tropical plants, which may easily be done by having the tank connected with the boiler by circulating pipes provided with valves.

If found convenient, the boiler and shed may be placed in the middle of the structure, carrying the heating pipes both ways therefrom. This is a more symmetrical arrangement, but this point will be governed in great measure by convenience as regards accessibility by coal wagons, drainage of the cellar, and nearness to the supply of water.

The internal arrangement will be best left to the taste of the owner, but any plant will thrive better in a bed where the roots can spread than if confined in a pot, but the confined condition of the roots favors early flowering; moreover, plants that are to be removed out-doors in summer are best potted. The pot, therefore, is a necessity, and is best kept from drying up by plunging to the rim in clean sand.

Such a house as has been described will cost from fifteen to twenty-five dollars per foot of length, according to the style and thoroughness of the work.

Some amateurs will desire only a small greenery of one compartment, attached to the dwelling-house, and heated by a coil of pipe from the furnace in the cellar, or, where steam is used, by a steam pipe, and much enjoyment may be derived from such a structure. It must be partitioned from the house so tightly that it can be smoked without smoking the dwelling. A very convenient greenery may be cheaply made by fitting sashes between the posts of a piazza, to be removed in summer with all the shelves and pots. A heating coil of one-inch pipe, or a water-back in the fire-pot of a common furnace, connected with a system of circulation around the piazza floor, will suffice for heating, or if steam is used for heating the house, it may be very conveniently extended to the greenery.

For small greenhouses, detached from the dwelling-house, the hot-water circulation will be found cheaper and more satisfactory than steam, and far better than the old-fashioned flue, red-hot at one end and cold at the other, which is also a cumbrous affair and now little used. Steam has advantages where several houses are to be heated from one fire, since it is easier to divide and regulate the heat; but for so simple a structure as has been described nothing is so efficient and economical as a good hot-water boiler. The combination of flue and boiler is of much practical importance, the saving in fuel being balanced by the impaired draught and the danger of the escape of poisonous gasses into the house to the destruction of its contents.—*Wm. D. Philbrick, before the Mass. Hort. Society.*

BUILDINGS OF THE ANCIENTS.

It would seem that the modern system of hotels and apartment houses on a vast scale is mere child's play compared with the practice of the ancients in the same direction. The recent excavations at Pompeii have unearthed some enormous buildings, of such beauty and solidity in architecture, such perfect drainage, and such provisions for health and comfort, as to fill all who have seen them with astonishment. These newly discovered buildings contain thirty or forty immensely spacious apartments on the first floor, and as many on the second. The rooms looked out on a rotunda nearly forty feet long; courts supported by columns surrounded the bedrooms, which opened upon large ornamental gardens with fountains. Provision for light and air was made upon the most extensive scale. On the second floor were found evidences that there were suites of rooms built upon the flat plan of to-day. In fact, the revelations made by the exhumers at Pompeii show that place to have been one of the most wonderful of watering-places for splendor, comfort, health, and enjoyment, and give every evidence that floor-renting, like many other modern improvements, is not a new thing under the sun.—*Boston Saturday Evening Gazette.*

BUTTERED FLOUR.

"A Connecticut company," says the Hartford *Times*, "makes flour all ready for baking biscuit or strawberry shortcake; it only requires to be mixed with milk or cold water, and the batter is ready for the oven. The process of its manufacture is interesting. A quantity of wheat flour is sifted and dumped into a large tub. Butter cut into large cubes is added to the flour. Then the white-coated operator weighs out certain mysterious quantities of baking soda and fine table-salt, which go to swell the contents of the tub. Then the mixture is placed in a large polished cask, which revolves slowly in one direction, while a sort of dasher inside moves in the opposite direction. The cask revolves about thirty minutes, at the end of which time it is opened. It is found that the ingredients have been thoroughly mixed; every particle of moisture contained in the butter has been evaporated, and that the mixture is as fragrant as new-mown hay. It is then placed in bags and boxed for shipment."

OUR BOOK TABLE.

The American Seedsman.—Prospectus of a new magazine devoted to the interests of seed dealers and growers, soon to be published by I. F. Tillinghast, La Plume, Pa.

Mutual Fire Insurance Co. of New-York, 155 Broadway. Second Annual Report, showing the general healthy condition of the company, its cash assets amounting to over half a million dollars.

Kansas Agriculture.—Report of the State Board for the month of August, containing the estimated yield of Corn, acreage of Grass under fence, numbers and products of Live Stock, Fruit and Miscellaneous Statistics. Wm. Sims, Secretary, Topeka, Kansas.

Protection and Free Trade To-day, *by Robert P. Porter*, published by James R. Osgood & Co., Boston. This paper, which was read before the Arkwright Club, Boston, and ordered printed, gives a clear exposition of the principal facts about Protection and Free Trade, at Home and Abroad, in Field and Workshop, and is well worth the careful study of every thinking man.

The Age of a Horse, *by Professor J. M. Heard*, published by M. T. Richardson, New-York. A pocket manual, giving full information of the methods employed by professional horsemen and veterinarians to determine the age of horses, with numerous illustrations, showing the shape of the teeth at different ages. And a chapter on Horse Character, or how to determine the disposition of a horse, with portraits of several famous trotters and thorough-breds.

Outing, *Boston, Mass.*—The fact that the October issue of *Outing* is the opening number of Volume V. is in itself an evidence of success and growth on the part of this magazine that is very satisfactory to all who believe in the vigorous out-door life which it exemplifies and illustrates. *Outing* is fortunate among the younger magazines in having found an audience waiting for it. The field it entered two years ago was quite ready for the plowing. The gospel of recreation was alive in the public conscience, and *Outing* finds a warm response, from month to month, to its pleasant preaching in prose, poetry, and pictures. The October number is varied and bright in its attractions.

Man Wonderful in the House Beautiful, *by Drs. Chilion B. Allen* and *Mary A. Allen*. Elegantly bound in cloth; price, $1.50. Published by Fowler & Wells Co., New-York.

The book is an allegory, in which the body is the "House Beautiful," and its inhabitant the "Man Wonderful." The building of the house is shown from foundation to roof, and then we are taken through the different rooms, and their wonders and beauties displayed to us, and all this time we are being taught—almost without knowing it—Anatomy, Physiology, and Hygiene, with practical applications and suggestions.

We are then introduced to the inhabitant of the house, "The Man Wonderful," and learn of his growth, development, and habits. We also become acquainted with the guests whom he entertains, and find that some of them are doubtful acquaintances, some bad, and some decidedly wicked, while others are very good company. Under this form we learn of food, drink, and the effects of narcotics and stimulants.

The illustrations are of the best, and these, together with the happy verbal illustrations, give the reader a clear idea of the subjects treated.

American Association of Nursery-men, Florists and Seedsmen; Proceedings of the Ninth Annual Meeting, held at Chicago. The transactions of this, the largest and most enjoyable gathering of American Nursery-men ever held, are full of interest to every one engaged in horticultural pursuits. The front page presents an excellent portrait of the president, Mr. Myron A. Hunt, and another page is dedicated to the memory of the late Dr. John A. Warder. Among the most important papers read and discussed are, The Transportation Problem, by U. B. Pearsall; Uncertainties, by J. Jenkins; Wintering Roses, by S. T. Phoenix; Influence of Stock on Bud or Graft,

by N. H. Albaugh; The Roses of California, by W. A. T. Stratton; Climatic Conditions of the Year, by J. C. Plumb; Our Work a Necessity, by J. R. Johnson; Advertising, by Peter Henderson; Artificial Fertilization, by John Thorpe; Pioneer Nursery-men, by Edgar Sanders; Reports on Stock, etc. A trip to the new city of Pullman was only one of the many enjoyable features to which those present were treated by their hospitable entertainers; in fact, there were so many entertainments planned that there was not time enough to get around, and therefore the members, very properly, voted to return to Chicago next year and dispose of the unfinished business.

Agriculture of Pennsylvania.—Reports of the State Board of Agriculture, the State Agricultural Society, the State Dairymen's Association, the State Horticultural Association, and the State College. The combination of these various Reports, all of value to every intelligent farmer of the State, makes a noble volume, which does much credit to its editors and the progressive spirit of the Keystone State. In the limited space at our command we can notice only a few of the essays and papers which, in addition to the reports of the various committees, appear to us of most value. Insect Pests of the Garden and Farm, by Th. J. Edge; the Tobacco Season, by F. R. Diffenderfer; Black Knot in the Plum and Cherry; Diurnal Rapacious Birds, by B. H. Warren; the Guenon System, by W. P. Hazard; Studies for Farmers' Boys, by C. B. Cochran; Peach Yellows, by Prof. D. P. Penhallow; Gathering and Marketing Fruit, by G. Heister; the Lung Plague, by Prof. R. S. Huidekoper; Root Crops, by E. Reeder; Bee-keeping, by G. Prizer; Carp Culture, by Capt. M. P. Pierce; Food and Feeding of Domestic Animals, by Dr. E. Harvey; the Corn Worm, by Prof. S. S. Rathoon; Potato Culture, by M. W. Oliver.

The Horticultural Report especially is brim-full of interesting articles, among them papers on New Fruits, Pear Blight, Forcing Hardy Roses, Raspberries, Grapes, the Codling Moth, Yellows, Insects in general, Orchards, and many others of not less importance. Taking it all in all the volume is worth many times its cost to the agricultural interests of Pennsylvania.

CATALOGUES RECEIVED.

Jenkins' Nurseries, *Winona, O.*—Fall Catalogue of Fruit and Ornamental Trees, Small Fruits, etc. Tree Seedlings a specialty.

Geo. S. Josselyn, *Fredonia, N. Y.*—Catalogue of American Grape-vines and Small Fruits. Headquarters for Fay's Prolific Currant.

John R. & A. Murdock, *Pittsburgh, Pa.*—Descriptive Catalogue of Fruit and Ornamental Trees; also Fall Catalogue of Hyacinths, Tulips, Lilies, and Winter-blooming Plants.

Wm. Parry, *Parry P. O., N. J.*—Circular and life-size illustration of an entire branch of Wilson Junior Blackberry, showing the marvelous productiveness of this excellent new Blackberry.

Chas. A. Green, *Rochester, N. Y.*—Illustrated Catalogue of Trees, Plants, and Vines, with many valuable hints on Fruit Culture.—James Vick Strawberry, Shaffer's Colossal Sonhegan, Gregg, Marlboro Raspberries, Kieffer Pear, and Nelson Apple are specialties.

J. T. Lovett, *Little Silver, N. J.*—Illustrated Catalogue of Small Fruits, Trees, and Plants, giving "honest" descriptions and much useful and practical information. Also special and very original circular about the Hansell Raspberry, for which this establishment is head-quarters.

The Mapes Manures.—Analyses by the State Experiment Stations of New Jersey and of Connecticut, together with the Guaranteed Standard, showing that they are not only up to their published guaranteed high standard, but that they have improved in concentration and solubility.

Goff's Hand-book of Ready Reference, for Advertisers, with Universal Compendium for Business Men, published by *Azro Goff*, 150 Nassau St., New-York.—A neat volume, containing a classified list of all the leading newspapers of the United States, and a large amount of useful information about business matters in general.

P. J. Berkmans, *Fruitland Nurseries, Augusta, Ga.* Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, Evergreens, Hardy Flowering Plants, etc.—This pioneer southern nursery, while, in point of quality and variety of its stock, it is equal to any establishment in the United States, for trees adapted to the southern climate and the wants of southern fruit-growers, stands ahead of all competitors.

Ellwanger & Barry, Mount Hope Nurseries, *Rochester, N. Y.*—Descriptive Catalogue of Fruits; also Descriptive Priced Catalogue of Small Fruits; Descriptive and Illustrated Catalogue of Bulbous Flower Roots, etc., for fall planting; Supplementary List of Novelties and Specialties, prominent among which we notice Windsor Cherry, Amber Queen Grape, Industry Gooseberry, and all the leading novelties in fruits and ornamental plants.

ANSWERS TO CORRESPONDENTS.

Plant for Name.—*L. R. D., Great Bend, Pa.*—The name of the plant sent is *Saponaria officinalis*, Soapwort or Bouncing Bet. It is native to Europe, but has become so common here along road-sides as to be almost a weed. The root was formerly used as medicine.

Renovating Lawns.—*Several Subscribers.*—On page 150 of our August number we published an excellent article on the subject, by Mr. Chas. E. Parnell. We could not improve it if we tried, and as we do not feel inclined to reprint it, the inquirers are referred to the same. *Do* preserve your papers.

Tomatoes in Greenhouses.—*H. F. T., Framingham, Mass.*—The object of brushing the flowers of Tomatoes growing in greenhouses with a camel's-hair brush is to produce better fertilization or pollenization. It is but little trouble to do this and insures a better setting of fruit, although we have seen good crops of greenhouse Tomatoes raised without this operation.

Winter Garden at the Holidays.—*S. C. P., Laprairie, Canada.*—To have Holland bulbs bloom at Christmas, they should be planted at once in pots, which are to be kept out-of-doors until hard freezing weather, when they have to be brought to a warmer place or covered so that the pots will not break. When the pots have become well filled with roots they may be brought to a warm room, watered more copiously, and forced into bloom.

Wintering Antignon leptopus.—*P. P. S., Medford, N. J.*—This is not hardy in the latitude of Philadelphia, but the tubers may be easily lifted after the vines have been touched by frost, and kept in dry sand in a warm cellar, similar to Dahlias. It propagates easily from cuttings.

Ipomœa noctiphyton (grandiflora), the Queen of the Night, is an annual species, and has to be raised from seed every year, or it may be propagated by cuttings in the fall, planted in small pots, and wintered in the greenhouse.

Reducing Bones.—*W. L. C., Eldred, Pa.*—To prepare a ton of bones for manure it will hardly pay to buy a bone-mill, and to dissolve them in acids is a disagreeable and not undangerous work. We have prepared many tons of bones by crushing the largest ones with a heavy sledge, and mixing the pieces through a freshly made compost heap, or with the manure of a hot-bed. For vegetables, and in fact for everything growing in the garden, such a compost is invaluable. Bones may also be decomposed by placing them in a water-tight hogshead, in alternate layers with unbleached wood-ashes, keeping all constantly moist with house-slops. They will crumble into pieces during one summer. Small quantities of bones cannot be used to better advantage than to bury them near Grape-vines or fruit-trees.

Bearing Age of Fruits.—*E. B. C., Wyoming Ter.*—Blackberries, Raspberries, and Currants, if planted in spring, will bear a partial crop the following year, and a full one the year after. If freight rates are very high, small plants may be selected, to weigh not over four pounds per hundred plants. Plum-trees bear their fruit on spurs produced on wood two years old and upward, so that under favorable conditions they will commence to bear the third year after planting.

Strawberry-tree.—*S. W., Mexico, Mo.*—The botanical name of this small tree is *Euonymus Americanus*. It grows wild on wooded river-banks from Western New-York to Illinois and southward, and is frequently found in cultivation, as its crimson fruit is very ornamental in autumn. The fruit is not edible, however, and, except in color, resembles a Strawberry about as much as a dry Pea-pod resembles a Baldwin Apple. Plants of this, as well as the still more ornamental species, *E. atropurpureus*, may be had at any good nursery establishment. They grow readily in any good garden soil, and are worthy of a place in every extensive shrubbery.

The Niagara Grape.—It will be agreeable news to all who have for the past half a dozen years watched the development of this remarkable white Grape, that the company which owns the stock has decided to place the vines on the market. *T. S. Hubbard, Fredonia, N. Y.*, has been appointed general agent, and will supply nurserymen and dealers at a fixed, uniform rate. The favorable opinion we had formed of this Grape when we first saw and tasted it has been confirmed with each succeeding year, and we are fully convinced that Grapes like those now received from Mr. Hubbard will more than satisfy by far the greater majority of people.

Meat-choppers.—We call the attention of our readers to the Enterprise Meat-choppers, advertised in our present issue. The demand for these choppers has attained such immense proportions, that the manufacturers have been compelled to largely increase their facilities for making them, and we are assured that they are now being turned out at the rate of 2500 per week, 150 hands being steadily employed on them.

There can be no doubt as to the excellence of these choppers, as they have been tested by the editors of nearly 100 agricultural papers, who have given them a hearty indorsement. We cordially recommend them to our subscribers as the best machine of the kind ever introduced to public favor.

Art Note.—Jean Robie is unquestionably one of the foremost living flower-painters. His pictures excel in their fidelity to nature, the warmth and richness of their coloring, and his subtle rendering of the spirit of the flower. His Roses are unrivaled. Like every artist of genius, Robie has been very unwilling to permit the publication of copies of his most cherished works. It is a matter for just congratulation to Americans that he has, at last, accorded this privilege to one of the most famous Art publishers. Mr. Louis Prang has undertaken to reproduce one of the artist's masterpieces as a satin print. The picture selected is of medium size, and includes Roses of various kinds, intermixed with Spiræa, and arranged in a deep blue vase, which contrasts charmingly with a crystal bowl in the foreground, which reflects, as it seems, every ray of light. The copy is absolutely faithful to the original, and is the most ambitious publication of the kind ever attempted.

Michigan Farming.—The following extract from a correspondent of the *Cultivator and Country Gentleman*, referring to lands in Otsego Co., Mich., gives a fair idea of the productiveness of Michigan lands. Those desiring more complete information should write to Hon. O. M. Barnes, Lansing, Mich.: "Dr. N. L. Parmater, who has a homestead of 160 acres, four miles north-west of Gaylord, with 25 acres under cultivation, gives his average yield of corn at 60 bushels to the acre, and potatoes 250 bushels. Last year his oats grew five feet high, and weighed 40 pounds to the bushel. This year he has a field of timothy which must yield two tons or more to the acre, and a handsome field of winter-wheat, which ought to return 30 bushels to the acre. The doctor also has 200 standard and 60 dwarf apple-trees, the oldest set out two years ago, and all thrifty. They show an average growth of 18 inches last year, and about 12 inches to date this year. Last year he raised ruta-bagas at the rate of 800 bushels to the acre, sown broadcast, and a 'specimen Marblehead cabbage,' which weighed 26 pounds after the stem and loose leaves had been removed."

AMERICAN GARDEN PREMIUM LIST

A Desirable, Useful, and Valuable Present

To every subscriber to the AMERICAN GARDEN for 1885, and the remaining numbers for **THIS YEAR FREE** to those subscribing **NOW.**

ALL ARTICLES offered as Premiums are of guaranteed, first-rate Quality, including many wanted in every Home, and by every Person, Young or Old. ☞ **Read the Descriptions in the Premium List.**

FINE PRESENTS FOR HOLIDAYS.

DELIVERED RIGHT TO YOU, no matter how far off you live! Many of the Good Articles in the Premium List will be delivered, CARRIAGE PREPAID, to any place in the United States or Territories, however near or distant.

N. B.—The articles not offered post-paid, will be carefully packed without charge, and forwarded by express or otherwise, as may be desired, at expense of the receiver, or delivered free at our office. The expenses of carriage will not be great.

A DOLLAR AN HOUR can easily be secured by *many* persons, **LADIES** included (also by **BOYS** and **GIRLS**), thus: Show to friends and neighbors a specimen copy of the *American Garden*, its beauty and usefulness, and low cost. An hour's time should suffice to get 2, or 3, or 4 to take it. This will give you a dollar's worth, or MORE, of the valuable articles in the Premium List—articles better than their money cost. Why! it would *pay* many persons to continue this as a constant employment, and sell the premium articles received when not needed by themselves. **N. B.**—Any Premium club may contain subscribers from many Post-Offices.

ALSO NOTE, that in **addition to your premium** you can **offer to every subscriber** a **FREE** Premium, as noted on this page. (Several of these Seed and Plant parcels will be worth a full Dollar, or more, leaving the Journal *free.*)

A Present to Every Subscriber TO THE AMERICAN GARDEN.

While we offer a choice of many fine things to those who take time and trouble to aid the publishers in extending the circulation of THE AMERICAN GARDEN, as a recognition of their kind efforts and as a Reward or pay for such aid; and while we intend to and *shall make* THE AMERICAN GARDEN worth to every reader many times its small cost, yet we desire to give a friendly recognition of some direct kind to *each one* of our readers as far as possible; and having unusual facilities for securing valuable seeds, etc., desirable for use or for trial, we offer to every subscriber to THE AMERICAN GARDEN his or her own choice of any *one* of the Seed, Plant, or Bulb parcels named below.

☞**THIS OFFER IS TO EVERY SUBSCRIBER** for one year, whether subscribing singly or in Premium or other Clubs.

☞In sending your subscription or giving it to club gatherers, give in each case the *number* below of anything you desire.

☞Our readers will notice that many of the things named are *new* and *rare*, and of extraordinary merit. To purchase these (if they could all be bought) would cost 25 to 50 cents each.

POSTAGE FREE. All the articles offered on this page as presents will be sent postage prepaid.

FLOWER SEEDS.

Directions for culture are given with each package.

No. 1. *Wild Garden Seeds.*—A half-ounce packet. This novelty in flower gardening, which was first introduced as an AMERICAN GARDEN *premium*, continues to be a general favorite; and being in greater demand than ever, we retain it among our premiums. The present selection contains over 100 varieties of choice flower seeds, which, in single packets, could not be bought under $5.00.

No. 2. *Pansy, Bliss's Perfection.*—This strain eclipses anything hitherto offered, and for variety of markings, beauty of form, large size, good substance, and splendid satiny texture, is likely to remain unrivaled for a long time to come.

No. 3. *Single Dahlias.*—A packet of seeds carefully selected from over 100 varieties, comprising all the most brilliant and decided colors. If sown in early spring, in pots in the house or in the hot-bed, flowering plants may be had by midsummer.

No. 4. *Hollyhock, choice double mixed.*—This plant has become very popular of late, and deservedly so, for its stately growth and varied colors commend it to a place in every collection. The seed offered has been saved from an unsurpassed European collection.

No. 5. *Balsam, "White Perfection."*—The immense pure white flowers of this variety are of the most perfect Camellia form, and for pot culture or cut flowers in winter is most desirable.

No. 6. *Everlasting Flowers.*—A mixed packet of 12 distinct varieties. This class of flowers is constantly increasing in favor, and for winter bouquets and decorations generally nothing is more treasured. All are annuals of easy culture.

No. 7. *Ornamental Grasses.*—A mixed packet of the 12 best varieties. As an accompaniment of flowers, fresh or dried, in bouquets or vases, nothing can be more appropriate and graceful than sprays of ornamental grasses.

VEGETABLE AND FARM SEEDS.

No. 8. *Pea, Bliss's Ever-bearing.*—A sample packet of this extraordinary new wrinkled Pea; for large yield, excellent quality, and continuity of bearing, it has no equal.

No. 9. *Pea, Bliss's Abundance.*—One packet. A new early dwarf variety, pods 3 to 3½ inches long, containing 6 to 8 large wrinkled Peas of excellent quality.

No. 10. *Chou de Berghley.*—One packet. A remarkable new vegetable. It is hardy, and of a distinct, delicate, and delicious flavor.

No. 11. *Onion, Giant Zittau.*—One packet. An introduction from Europe, of handsome globular shape, bright yellow skin, and pleasing flavor. They grow to an enormous size.

No. 12. *Water-Melon, American Champion.*—One packet. No other variety combines so many valuable qualities.

No. 13. *Potato, Charter Oak.*—One tuber. Flesh snowy white, fine grain, well flavored, cooks dry and mealy. It is one of the most promising of the new varieties that have lately been brought into notice.

PLANTS AND BULBS.

No. 14. *Tritoma uvaria* (Red Hot Poker Plant).—A highly ornamental herbaceous plant, producing in summer and autumn dense flower spikes, averaging about two feet in length, and of a brilliant Orange-red color. The effect produced by these flame-colored flowers is admirable, and considering its easy culture, we consider this one of the best hardy plant premiums we offer.

No. 15. *Calla Æthiopica* (Lily of the Nile).—Every one knows this stately plant, so popular on account of its easy culture, and so desirable on account of its fragrance and free flavoring habit. We offer a strong root, which, with proper treatment will flower this season.

No. 16. *Clematis crispa.*—This is a beautiful and distinct species, recently introduced, the flowers of which are from one and one-half to two inches in diameter, and in form resembling a bell-shaped Lily; the color is best described as a beautiful lavender-blue, with a peculiar combination of opaque white, while the perfume is of a delicious piquant *bergamot* flavor.

No. 17. *Tigridia grandiflora alba* (new white Tigridia).—This splendid acquisition was the center of attraction wherever exhibited the past season. The flowers are pure white, and larger than the other varieties of this family.

No. 18. *Lily of the Valley.*—Six flowering crowns of this charming universal favorite, the pleasing and delicious odor of which no one ever tires of. It thrives well in shady places, and as a winter window-plant its deep green foliage and white flowers make it always welcome.

No. 19. *Clematis coccinea* (Scarlet Clematis).—One of the most desirable climbers for covering verandas, trellises, arbors, screens, etc., as it grows from eight to ten feet in one season. Its coral red flowers are produced in great profusion.

No. 20. Valuable Seeds.—Any one sending subscriptions to THE AMER. GARDEN at $1.00 a year, can select, from the previous columns, one premium for himself or herself in addition to the one offered to the subscriber; or, in lieu thereof, send for the "Hand-book of the Farm and Garden" (to B. K. Bliss & Sons, 34 Barclay street, New-York), and select twenty-five cents' worth of any seeds therein named for each subscriber sent in.

No. 21.—Those sending 4, 5, or 6 subscribers may select 30 *cents'* worth of seeds for *each.*

No. 22.—Those sending 7, 8, or 9 subscriptions may select 35 *cents'* worth of seeds for *each.*

No. 23.—Those sending 10, 11, or 12 subscriptions may select 40 *cents'* worth of seeds for *each.*

No. 24.—Those sending 13, 14, or 15 subscriptions may select 45 *cents'* worth of seeds for *each.*

No. 25.—Those sending 16 or more subscriptions may select 50 *cents'* worth of seeds for *each.*

PREMIUMS

To those securing and sending Subscribers to American Garden.

The publishers of the AMERICAN GARDEN offer a choice from any of the valuable articles described in the following pages, to all who will send the number of subscriptions named with each article. Everything described is first-class in every way, and **CAN BE FULLY RELIED UPON.** Great care has been exercised to offer none but the *best* and none but those possessing **GREAT MERIT.**

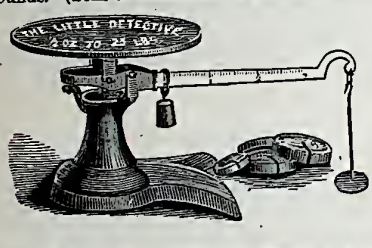
Almost any one can in a few hours gather names enough to get a valuable article that may be desired or needed **WITHOUT EXPENSE.**

No. 26.

A VERY GREAT CONVENIENCE

For every House, of Excellent Quality, and at only One-third of Former Cost!

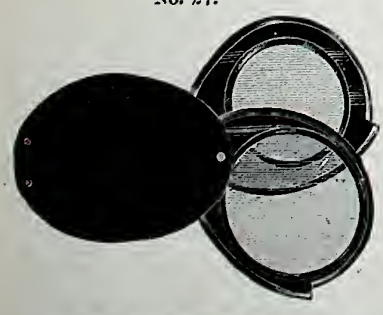
A thousand times a year every Family finds it convenient to know the accurate weight of something—of articles to be sold and those bought (to "detect" cheating or "accident" in weight, so common among dealers, butchers, ice-men, etc.); to salt butter, make cake, put up fruit, etc., etc. Steel-yards are very inconvenient; spring-balances are inaccurate for large weights, and are changeable; when good for pounds, they are quite too large for ounces. Good scales *have* been costly and cumbersome. NOW, in the **"Little Detective Scales,"** we have great convenience, accuracy in weighing anything, from one-quarter of an ounce (for letters and papers and packages for mailing, etc.) up to twenty-five pounds. (Tens of thousands of dealers are now



using these on their counters.) They can be set on a shelf, be moved about, have both fine graduated brass scale arm and extra weights, from one to twenty-five pounds. Owing to their good quality, great durability, simplicity, and utility, the immense demand makes it possible to supply **them at one-third the old price for such good scales.** Value, $3.00.

We will present the same with weights complete, packed safely to send anywhere, to any one sending 5 subscribers to the AMERICAN GARDEN at $1.00 each (or 2 of them for 9 subscribers).

No. 27.



LOUPE MAGNIFYING GLASSES.

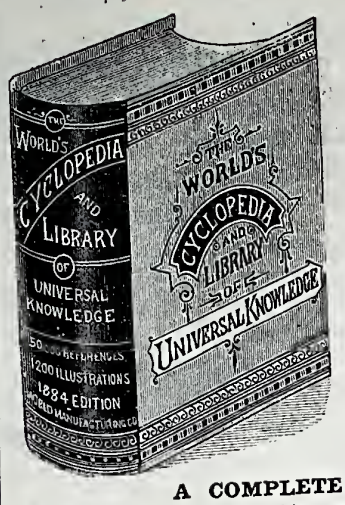
A very convenient Pocket Magnifying Glass is shown in the engraving. It has two GOOD LENSES, 1⅛ and 1¼ inches in diameter. These may be used singly or together, both closing into a strong, neat, polished Hard Rubber Oval Case, 1½ by 2 inches and ⅝ inches thick. They magnify objects quite plainly, and may be used as a Sun-Glass to strike fire. PRESENTED, post-paid, for three subscriptions to the AMERICAN GARDEN at $1.00 each. Two for 5 subscriptions. Value, $1.15.

No. 28.

A GRAND OPPORTUNITY.

THE WORLD'S CYCLOPEDIA AND LIBRARY OF UNIVERSAL KNOWLEDGE

Will be forwarded **FREE** to any one sending us, **BEFORE** the first of December, two subscriptions to the AMERICAN GARDEN for 1885.



THE WORLD'S CYCLOPEDIA AND *Library of Universal Knowledge*

Is an elegantly bound volume of **800** pages, **50,000** separate and distinct references, **1200** engravings, illustrating various topics, accurate and concise information on art, science, philosophy, and religion, including learned essays by the compiler, Professor H. L. Williams, and several hundred other authors. The articles on Anatomy, Architecture, Agriculture, Astronomy, and the Fine Arts are full and explicit. Botany, Chemistry, Engineering, Geography, Geology, and History are each treated ably and explicitly. The article on engineering is still further amplified by a full description, illustrated with plates and diagrams, of

THE GREAT BROOKLYN BRIDGE.

Mechanics, with plates illustrating mechanical motions; Mineralogy, Medicine, Law, Languages, and Governments are so clearly treated of that every one who reads can understand. In addition to the full and complete Cyclopedia arranged in alphabetical form, we have bound up in the volume

A COMPLETE LIBRARY OF KNOWLEDGE,

including a Guide to Correct Speaking and Writing; Book-keeping, a Complete Guide to Business; Chronological History; Mythology;

AN INDEX TO THE HOLY BIBLE;

A Complete Brief Biographical Dictionary. Full and Complete Statistical History of the United States, corrected down to 1884. The Interest, Banking, Usury, Insolvent, and Homestead Laws of the United States are for the first time gathered together in one volume.

A LIST OF COUNTERFEIT NOTES,

with Rules for Detection of Counterfeits; Separate Dictionaries of Musical, Nautical, and Geographical terms. A carefully prepared treatise on Pronunciation, giving rules and examples whereby every one can become his own teacher.

AN APPENDIX OF THE ENGLISH DICTIONARY,

giving hundreds of words not contained in the ordinary dictionaries.

FLAGS OF ALL NATIONS,

beautifully illustrated by colored plates. **In fact, the book is a complete library in itself.**

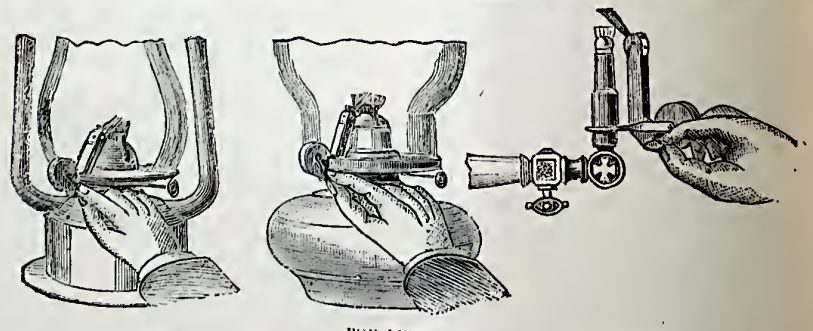
It is profusely illustrated, and contains a mine of information on almost every subject known to man. Every one of the many departments is worth more than the cost of the book. As "knowledge is power," this Cyclopedia will be a source of wealth to thousands in all ages and conditions of life. This handsome octavo volume is printed on good paper and handsomely bound in cloth embellished with gold.

On receipt of two dollars for two subscriptions—not necessarily at the same Post Office—we will send the AMERICAN GARDEN from now till December, 1885, to the addresses given, and a copy of the **World's Cyclopedia and Library of Universal Knowledge** to the sender of the club. Each subscriber is also entitled to one of our regular premiums, the same as if the subscriptions had been sent singly.

We make this extraordinary and liberal offer to compensate our friends for whatever exertions they may make toward extending the circulation of the AMERICAN GARDEN, and also to induce our readers to send in their subscriptions **now,** that we may be enabled to arrange our lists and books as much as possible before the close of the year.

No. 29.

AUTOMATIC LIGHTER,



FOR LIGHTING

LANTERNS, LAMPS, AND GAS,

Cheaper, Quicker, Easier, and Safer than Matches.

No burning ends to be thrown down by careless persons, which the public know has caused fearful loss of life and valuable property.

THE AUTOMATIC LIGHTER

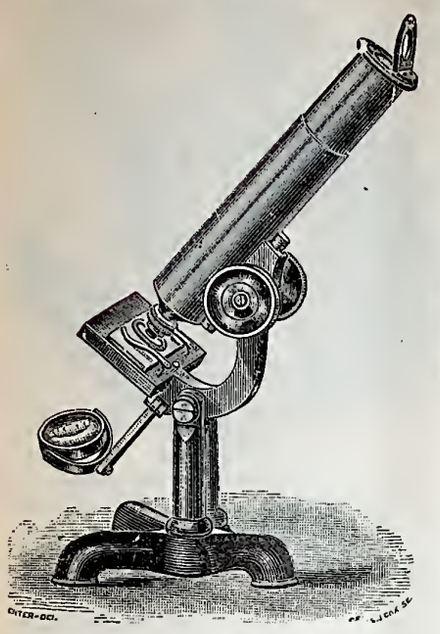
Is attached to Lanterns, Lamps, and Gas-burners, and will instantly light the wick or gas sixty times in succession, without removing chimney or globe, lights equally well in the wind or in the house, and may be repeatedly supplied with 60 lights. We have given these lighters a trial and consider them a decided improvement over matches.

We offer either the Automatic Lighter for Gas Burner, the Automatic Lighter and Burner attached for Kerosene Lamp, or the Automatic Lighter and attachment for Burner for Kerosene Lantern, post-paid, for one subscriber.

The Automatic Lighter and Lantern complete for two subscriptions to the AMERICAN GARDEN at $1.00 each, receiver to pay expressage. A box containing 260 lights accompanies each Lighter.

No. 30.

COMPOUND MICROSCOPE.



THE WONDERFUL UNSEEN WORLD

Brought to Your Eyes.

A most Remarkable Instrument, that every reader of the American Garden can now easily possess. Full of interest and of great Practical Utility.

The publishers of THE AMERICAN GARDEN are happy to announce that they have secured a most interesting and valuable **Compound Microscope**, that cannot fail to give great pleasure to every one that obtains it, and that they cannot only supply it at a *very low price* (not a quarter of the old price for so excellent an instrument), but multitudes can obtain one **WITHOUT COST.**

The engraving shows the instrument (in part) which is three times as large as this picture. It magnifies objects from **2500 to 10,000 TIMES** their natural size, and even more if desired (*50 to 120 diameters*).

This instrument is of the *most perfect make*, and it has all the chief parts of compound microscopes, costing from $50 to $500, including solid STAND, Joint for inclinations, Stage, Clamps, swinging concave Mirror (for transparent and opaque objects), Draw tubes for greatly increasing magnifying power, *two very* fine *Object Lenses*, a very fine Eye-piece, very delicate Rack and Pinion for easily adjusting the focus, etc. The Body and Draw Tubes are fine nickel-plated. *A very important adjunct is the*

CAMERA LUCIDA,

which throws upon paper a *highly magnified* image of very small and even invisible objects, so that a child can make accurate drawings of them.

The whole instrument and parts are fitted into a very neat walnut Case, with handles—both for keeping and for carrying anywhere. Each instrument has several Accessories, such as glass cell for fluids, plain slides, glass covers for objects, and a mounted object.

It will afford wonderful interest to every possessor, and be useful in a thousand ways—in detecting the minutest adulterations in food, the infinitesimal insects that destroy plants, etc., etc.

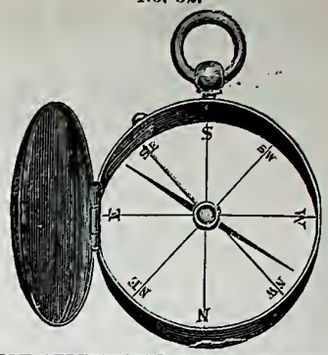
Value, $10.00. Every Instrument is guaranteed by the best makers in America (the Bausch & Lomb Optical Company). We will present this superb instrument complete, to any one sending us 15 subscriptions to the AMERICAN GARDEN at $1.00 each, carriage prepaid.

No. 31.

A BEAUTIFUL GRAPHOSCOPE.

We offer to our friends a very beautiful Graphoscope, having a large, clear Lens, 4 inches in diameter, and Stereoscopic Lens combined with it, all arranged to be put away as desired, in the Case, which answers as the stand. The CASE is neat, polished, solid Walnut with imitation Ebony bottom and feet. This shows full-sized single pictures clearly, and well magnified, as well as stereopticon views. The large lens can be held in the hand by its frame as an excellent "Reading Glass." Value, $5.00. We will PRESENT it for 10 subscriptions to AMERICAN GARDEN at $1.00 each.

No. 32.



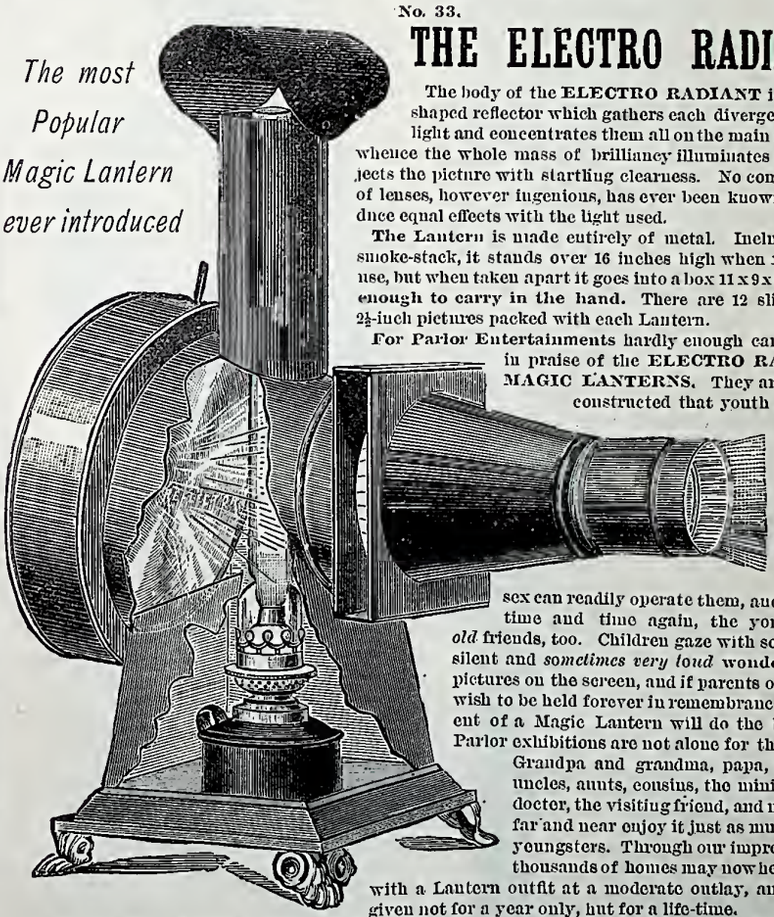
VERY SERVICEABLE POCKET COMPASS.

We have secured a first-rate **Pocket Compass**, in a strong, polished Brass Case, very similar to a watch case, 1⅝ inches in diameter. The Dial is white (bright Silver), easily seen at night. The large NEEDLE is very sensitive, taking its place quickly. It has a stop-bar, which is very important, as it holds the needle fast when not in use, and thus preserves it in order many years, no matter how rough the usage of the case. This excellent compass, valued at $1.50, will be PRESENTED, post-paid, for 3 subscribers to the AMERICAN GARDEN at $1.00 each (or two compasses for 5 subscriptions).

No. 33.

THE ELECTRO RADIANT.

The most Popular Magic Lantern ever introduced



The body of the **ELECTRO RADIANT** is a cone-shaped reflector which gathers each divergent ray of light and concentrates them all on the main reflector, whence the whole mass of brilliancy illuminates and projects the picture with startling clearness. No combination of lenses, however ingenious, has ever been known to produce equal effects with the light used.

The Lantern is made entirely of metal. Including the smoke-stack, it stands over 16 inches high when ready for use, but when taken apart it goes into a box 11 x 9 x 12, **small enough to carry in the hand.** There are 12 slides with 2½-inch pictures packed with each Lantern.

For Parlor Entertainments hardly enough can be said in praise of the **ELECTRO RADIANT MAGIC LANTERNS.** They are now so constructed that youth of either sex can readily operate them, and amuse, time and time again, the young and *old* friends, too. Children gaze with sometimes silent and *sometimes very loud* wonder at the pictures on the screen, and if parents or friends wish to be held forever in remembrance, a present of a Magic Lantern will do the business. Parlor exhibitions are not alone for the young. Grandpa and grandma, papa, mamma, uncles, aunts, cousins, the minister, the doctor, the visiting friend, and neighbors far and near enjoy it just as much as the youngsters. Through our improvements thousands of homes may now be supplied with a Lantern outfit at a moderate outlay, and joy be given not for a year only, but for a life-time.

In Institutions for the instruction of those thousands among us who are bereft of one or more faculties what more direct way of appealing to the remaining—often acutely sharpened—senses is there than through the medium of an illuminated, magnified picture on the screen in a darkened room?

For Earning Money by giving Public Entertainments the possessor of an **ELECTRO RADIANT** has something that will "draw" with the combined power of the **Theater**, the **Circus**, the **Prestidigitateur**, the **County Fair**, the **Temperance Crusade**, and the **Camp-Meeting.** A room that will hold 100 persons may be filled nightly and a good profit be cleared. Our photograph slides represent faithfully Beautiful Works of Art, Scriptural Scenes, Portraits of Prominent Persons, and Comic Subjects that are a never-ending source of delight.

A comparatively small amount of money will set a person up with an exhibition outfit which will make better returns than the same amount invested in any other business we know of. A small outfit may even be carried in the hands, and the preparation for an exhibition can be made in a few minutes. There are no heavy expenses for transportation, corps of assistants, intricate stage accessories, and illumination. Only a screen and the apparatus to transport and set up, and you are ready for business. If you succeed in getting only a small audience together it will pay, because the expenses are so small. And you can have almost any subject illustrated, and that one set of slides will carry you as long as you like. Value, $12.00. The same will be furnished to any one sending 20 subscribers to the AMERICAN GARDEN at $1.00 each.

No. 34.

Purdy's Perfect Pen

"Ever Ready."

Just See those People Write—An Amusing Scene—"Dips."

Did you over carefully watch a number of people *writing* together in the same room? If not, do so, and you will find it very amusing indeed. No two will act alike. One sits bolt upright; others bend their heads forward, right, left, every way. One sits still; others constantly move necks, shoulders, heads,—one making a direct bow to every long letter, and others a quartering one. Every second or third person has a particular position of the *tongue* in his cheek, teeth, or mouth,—in short, there is a distinct "mannerism" in every writer, aside from the letters he makes on paper, that would enable you to name each of a large party of writers if standing behind them. Try the experiment. *But they all agree in one thing,*—they keep up an everlasting "dip," "dip," "dip"—in the inkstand. And in this they differ greatly. One does it deftly; another makes an "inky way" between bottle and paper, often on to it, saying nothing of blots, soiled fingers, etc.

CURIOUS FIGURES.—Ordinary writers take a "dip" about every 40 seconds, depending upon the kind of ink, pen, etc., and this "dipping" means a great deal. As the previous "dip" runs out the letters grow faint, and the next ones are over-inked. On the average it takes at least one-fourth of all the time to go for ink and get the pen back and properly join on the words or letters where you left off to "dip." This is a serious loss of time and a bad interruption to a man writing figures, and especially to one putting down a train of thought. A dozen persons, writing steadily and rapidly for a single hour, will take about a *thousand* "dips." A clerk or business man writing a dozen years has spent one to three years in taking "dips"! (Not "tips," mark you.)

All the above easily saved, and other disadvantages. We write this with a first-rate Gold Pen that has not taken a single "dip" in four days, though it has written over thirty pages of letters! When it stops, we can in one minute give it a new supply of ink that will last as much longer. It is "**PURDY'S PERFECT POCKET PEN.**" It is always with us, ready on the instant, at home or abroad, in the business office, in the study or library, in the cars, in the hotel room, EVERYWHERE! No inkstand needed. It is used in place of lead pencil, always ready pointed, and an *indelible* one, too. *It pays for itself every month in the year!* In every house it will save table covers and carpets enough to pay for itself. It is very durable and, allowing a round interest on its price and a good "sinking fund" on the purchase money, it does not cost a cent a week! You, and your Wife and your Children, and your "cousins and sisters and aunts" and uncles too, *want* it. Its Gold Pen is the best. Its holder is neat, hard rubber.

This neat and durable Pen, valued at $4.00, will be presented, post-paid, to any one sending 8 subscribers to the AMERICAN GARDEN at $1.00 each, which can be quickly gathered among your friends and neighbors.

N. B.—In sending for the pen, say whether you want a *stiff* or *limber* or *medium* one. If the first does not suit your hand, you can exchange it for another at the cost of postage each way.

Every Man, most Ladies, and even every Boy, need a **Good Watch** *that can be depended upon.*

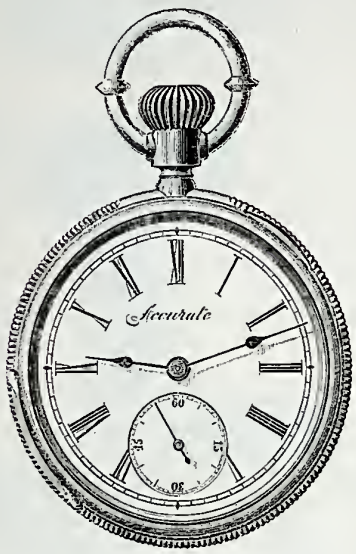
Very few can afford trustworthy Gold or Silver watches at the high prices they have hitherto cost.

There are now some very good watches made at reasonable prices, which are pretty reliable if you can get the right ones; **but,**

Not one in ten of those which are claimed to be of this kind are really trustworthy. There is more deception and swindling in watches than in almost anything else.

Nine-tenths of all the troubles with good watches come from dust *that gets into the delicate wheelwork during the opening for winding and through the key-hole. The inside of every key collects more or less dust, which, though invisible to the eye, is large enough to injure the works, into which it slips in winding. It is hardly possible to wind a watch a year (365 times) without the works being more or less soiled. Therefore, the* **Stem Winders** *and* **Setters** *are of great importance, as with these a watch need seldom be opened, but will go on for many years, without cleaning. The saving in this will pay the interest on even a very costly watch.*

No. 35.



How to Get A Good, Cheap, Reliable Watch.

The publishers of THE AMERICAN GARDEN are happy to announce to their friends that they have succeeded in securing a most **Valuable Watch**, which they can recommend with the *greatest confidence*, and which they can supply at a very low rate; *also*, that they can put it in the power of several thousands of people to obtain this most valuable Watch **WITHOUT COST.**

Description.—The engraving (Fig. 35) shows the size and general appearance of the Watch, which is very tasteful. The Case is pure *coin silver*, solid and substantial; the Face is clear white, easily seen by day or night, and is covered with a thick, flat, bevel-edged, clear **Crystal**, so strong as to endure heavy pressure. It is a *Stem Winder* and *Stem Setter*. (See importance of this above.) The **Works** are of very **superior excellence**, every way equal to many Gold Watches sold for $100 to $150. The platens run in **13 Jewels**. It has cut expansion balance (to counteract heat and cold), and Nickeled Movements; in short, it is so substantially made as to wear a life-time, and is abundantly accurate for all ordinary purposes of Business men, Professional men etc., etc. The Works are specially made for us, at one of the best Establishments in Switzerland, where long practice, cheap labor, and the most improved machinery enable them to supply such watches at a very low rate, and our special arrangements secure them to us at very near the cost of making.

This Watch, valued at $15.00, we will present, post-paid, to any one sending us 25 subscribers to the AMERICAN GARDEN at $1.00 each.

No. 36.

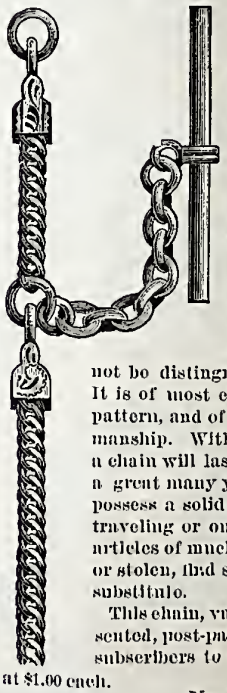
SAME WATCH IN HUNTING CASE.

Same Watch as No. 35 every way, but with the solid silver cap, or "Hunting Case" (as shown in figure 36), will be presented, post-paid, to any one sending 27 subscribers to the AMERICAN GARDEN at $1.00 each. Value, $16.00.

The **Works** *("the movements") of a Watch are the important part, and, if these are right, it will keep just as good time and last as long, whether in a nickel case or in a silver or gold one. A Silver case is just as good as a Gold one, and will last quite as long.*

No. 37.

A WATCH CHAIN



is as indispensable as a watch itself; in fact, most people would as soon be without a watch as to wear it without a chain.

A Solid Gold Chain is an expensive affair which cannot be indulged in by every one. The chain here offered as a premium—and which by a little effort may be secured without cost—is **Heavy Rolled Gold Plated**, and cannot be distinguished from solid gold. It is of most elegant and fashionable pattern, and of the best possible workmanship. With reasonable care, such a chain will last and look like new for a great many years. Even those who possess a solid gold chain will, when traveling or on other occasions when articles of much value are apt to be lost or stolen, find such a one a convenient substitute.

This chain, valued at $3.50, will be presented, post-paid, to any one sending 6 subscribers to the AMERICAN GARDEN at $1.00 each.

No. 38.

SLEEVE BUTTONS.

Like the above, these are not of the so-called Cheap Jewelry style, but are so well made and so heavily gold plated that no one can see the difference between them and solid gold ones at many times their cost. They have the **Patent Acme Lever Fastening**, and can therefore be put on with ease, and will stay after being put on. The center consists of a genuine **Tree Agate**, and they are, all in all, of as choice and tasteful appearance as any in market. For a Philopena, Birthday or Christmas Present for a lady or gentleman, nothing can be more appropriate. Value, $1.25.

We will present a pair of these sleeve buttons to any one sending 2 subscribers to the AMERICAN GARDEN at $1.00 each, post-paid.

No. 39.

BEACH'S NEW IMPROVED AMERICAN COMBINATION FRET SAW.

The many advantages of the above implement can be seen at a glance. It is chiefly built of iron and steel; has tilting-saw table; saw swings twenty inches for large brackets, and swings straight up and down; blower for dust. It will cut Horn, Bone, Ivory, Pearl Shell, Brass, and all kinds of wood up to one and one-half inches thick. It has *Drill Attachment* always ready for use; also *Turning Lathe* for wood twelve inches long and four inches diameter, and can be speeded to 1500 revolutions per minute. Has set of best steel *Turning Chisels*, Morse's Flint Drill, Oil Can, Screw Driver, a three-sixteenths-inch wide SAW for cutting up timber, etc., and 6 improved FRET SAWS. Value, $8.00. We will PRESENT it for 16 subscriptions to AMERICAN GARDEN at $1.00 each.

No. 40.

JUST HOW TO MAKE THEM.

EVERY LADY in America, young and old, and all the GIRLS, too, will be greatly delighted with a *New Book*, costing but a trifle, yet giving 400 beautiful Illustrations and Patterns of Fancy and Needle Work, in wonderful variety, with plain directions how to make at home. It is even worth many times its cost to keep to look at. The eminent writer, JENNY JUNE, says of this Book:

"It supplies within its compass a greater variety of excellent designs, every one of which is useful for dress or household decoration, than have ever before been gathered within the leaves of one Manual."

This is not too high praise. It is a Reliable Book for Daily Reference, enabling one to do artistic Embroidery, Lace Work, Knitting, Tatting, Crocheting, Macrame Lace Work, Net Work,—indeed, all kinds of Fancy Needle Work. This **Valuable Book** is beautifully printed on fine tinted paper, with handsome cover. It is entitled "*The Ladies' Manual of Fancy Work.*" But this does not fully express its real, practical, and general value.

We will present, post-paid, a copy in return for 2 subscriptions to the AMERICAN GARDEN at $1.00 each; and will send an extra copy for every additional *new* subscriber. Value, 50c.

No. 41.

EVERYBODY NEEDS

THE

AMERICAN DICTIONARY and CYCLOPEDIA,

No matter how many other Dictionaries they may have, large or small. This book is a neatly bound volume of over 600 pages (3 columns a page), giving the accurate Spelling, Pronunciation, and Definitions of

OVER 50,000 WORDS,

and 44 pages containing a great number of small engravings illustrating the words. The book is worth far more than it costs for these alone; but it contains in condensed form a VAST AMOUNT OF OTHER

VALUABLE INFORMATION

that *everybody* wants for constant reference. It is in this respect a comprehensive *Encyclopedia*, embracing 84 interesting subjects, too numerous to describe here. Among these are 24 pages of Vulgar and Incorrect Words and Expressions corrected; 30 pages of Difficult Words; 24 pages containing all names in the Scriptures and Apocrypha rightly pronounced; 340 business words and terms explained, such as, "Drafts," "Days of Grace," "Checks," etc., etc.; 400 words and terms used on Ships; 24 pages teaching how to Write and Speak properly and easily; Metrical System explained fully; Tables for readily reckoning Interest; Census population of States, etc., including 250 Large Cities and Towns; 53 past years' Prices for Wheat, Flour, Corn, Cotton, Sugar, Coffee, Beef, Butter, Iron, etc.; 500 common names of Men and Women, their derivation and meaning; Mortality Rate, and how long a person may on the average expect to live beyond any age; Wages Tables, etc., etc.,—to 84 subjects.

We will mail the above comprehensive and most valuable work, post-paid, for 2 subscriptions to the AMERICAN GARDEN at $1.00 each. Value, $1.00.

No. 42.

FOR PLANTS, CLOTHES, ETC.

If you have *plants* you can hardly do without the **Elastic Plant Sprinkler**, and for sprinkling bouquets, dampening clothes, etc., it is very convenient indeed. It is of elastic India Rubber, with a flat bottom to stand on, and a Rose which sends forth a fine spray on simply pressing the sides. It sucks in the liquid through the Rose, thus clearing it of coarse impurities. It is very durable. Everybody wants this. Value, $1.50. We will PRESENT one, post-paid, for 3 subscribers to the AMERICAN GARDEN at $1.00 each, or 2 Sprinklers for 5 subscribers.

No. 43.

THOSE TROUBLESOME SKATES NO MORE!

EVERY BOY, almost every Man, especially a heavy one, knows the trouble of keeping Skate Straps tight enough, without stopping free circulation of the blood in the feet to keep them warm. The heel would slip off in spite of you, even when you carried round a heavy metal plate fixed on its bottom. All such troubles are avoided in the **N. Y. Club Skate.** You clap it on the sole, turn the double-working screw, and the front is fast. With the same key turn another screw behind, and three flanged Clamps *firmly* grasp the boot heel in its front and on both sides of the rear. The whole is done in a moment, and away you go,—with the skates immovably fixed on the soles, and the feet warm by the freely circulating blood. These fine Skates have excellent Steel Runners and strong Frames. Send five subscribers to the AMER. GARDEN at $1 each (it is worth $10 a year to anybody), and we will PRESENT you with a Pair of these Splendid Skates and deliver them carriage paid. For nine subscribers we will give you two pairs.

N. B.—Send a paper, cut just the size of your boot sole, and we will select the right size skates.

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Specimen Copies, free.

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contains twenty large pages of closely printed matter relating to the *Vegetable, Fruit,* and *Flower Garden,* the *Lawn, Greenhouse,* and *Window-Garden, Rural Life, Sanitary Improvements,* and all branches of *Horticulture* in its various departments.

Volumes commence with the January number, and it is desirable that subscriptions should begin with the first number of the volume, although they may be entered at any time for a year from the date of entry.

A PREMIUM FOR EVERY SUBSCRIBER.

Encouraged by the success of the premiums sent out in previous years, and desirous to introduce THE AMERICAN GARDEN into every home, we offer special and most liberal inducements for the current year. All articles offered are of actual merit and decided acquisitions, and several of them are now introduced for the first time.

A COMPLETE LIST,

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ROSES. A Superb Collection. Carefully compiled Catalogue describing best *Old* and *New* varieties mailed free.

BULBS New Illustrated Catalogue, containing lists of the choicest bulbs, at lowest prices, now ready and mailed free.

NEW GOOSEBERRY.

We now offer a very valuable new variety. Circular giving full description and price, together with a handsome colored plate, and *New* Catalogue of Small Fruits, free. Address,

ELLWANGER & BARRY,
Mount Hope Nurseries. Rochester, N. Y.

Mention this paper.

NEW GRAPES & OLD. ILLUSTRATED AN THE Jeffersona CATALOGUE FREE A SPECIALTY. J. G. BURROW. FISHKILL N.Y.

WILD FLOWERS For cultivation: Orchids, Lilies, Ferns, Alpine, etc. Catalogue sent.
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J. T. Lovett, Little Silver, N. J.

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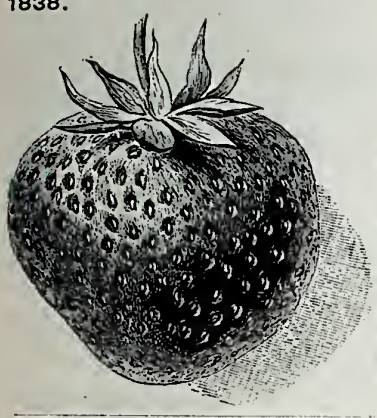
1838. 1884.



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ESTABLISHED 1838.

PARRY STRAWBERRY

Is a seedling of Jersey Queen, vigorous grower, **PERFECT FLOWER,** very productive, most beautiful bright color, ripening evenly all over, large size, highest in flavor, and firm.

☞ **BEST** for **MARKET** and **FAMILY** use. ☜

MARLBORO,—the Largest Early Raspberry.
WILSON, Jr.—the Largest Early Blackberry.
"It is nearly a week earlier than Wilson's Early."
WILMER ATKINSON in *Farm Journal.*

Selected specimens measured 4½ inches in circumference lengthwise, by 3½ inches crosswise, and produced over 100 bushels per acre.

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WM. PARRY, Parry P. O., New Jersey.

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HEADQUARTERS for NIAGARA, now offered without restrictions to planters for first time. 2 yr. vines, small, $2 each. None genuine without seal "Niagara White Grape Co." Special Terms to Agents.

Also other Small Fruits, and all old and new varieties of Grapes. Extra Quality. Warranted true. Cheap by mail. Low rate to dealers. Agents wanted.

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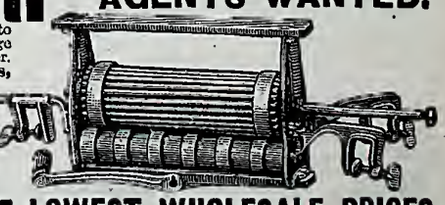

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

B. K. BLISS & SONS, Publishers.

Vol. V. NEW-YORK, NOVEMBER, 1884. No. 11.

A FRIENDLY REQUEST.

Our offer of last month, to send the remaining numbers for this year free to all subscribing now for 1885, has been promptly accepted by many of our older subscribers. In many cases the free copies were directed to be sent to friends at a distance, a number of whom had never seen THE AMERICAN GARDEN before, and were so much pleased with it that they became subscribers at once.

It is in this connection that we wish to remind our friends of the great service they can do us by bringing our paper to the notice of their friends interested in gardening matters of any kind, be it in city or country. We will gladly forward sample copies to any one whose address is sent us.

This surely is not much trouble, and a postal card costs but a cent; yet the aggregate results would add so large a number to our subscription list that it would enable us to considerably improve our paper and enhance its usefulness, thus benefiting our readers as well as ourselves. A favorable mention to a friend will have more influence than a whole column of our own advertising could have.

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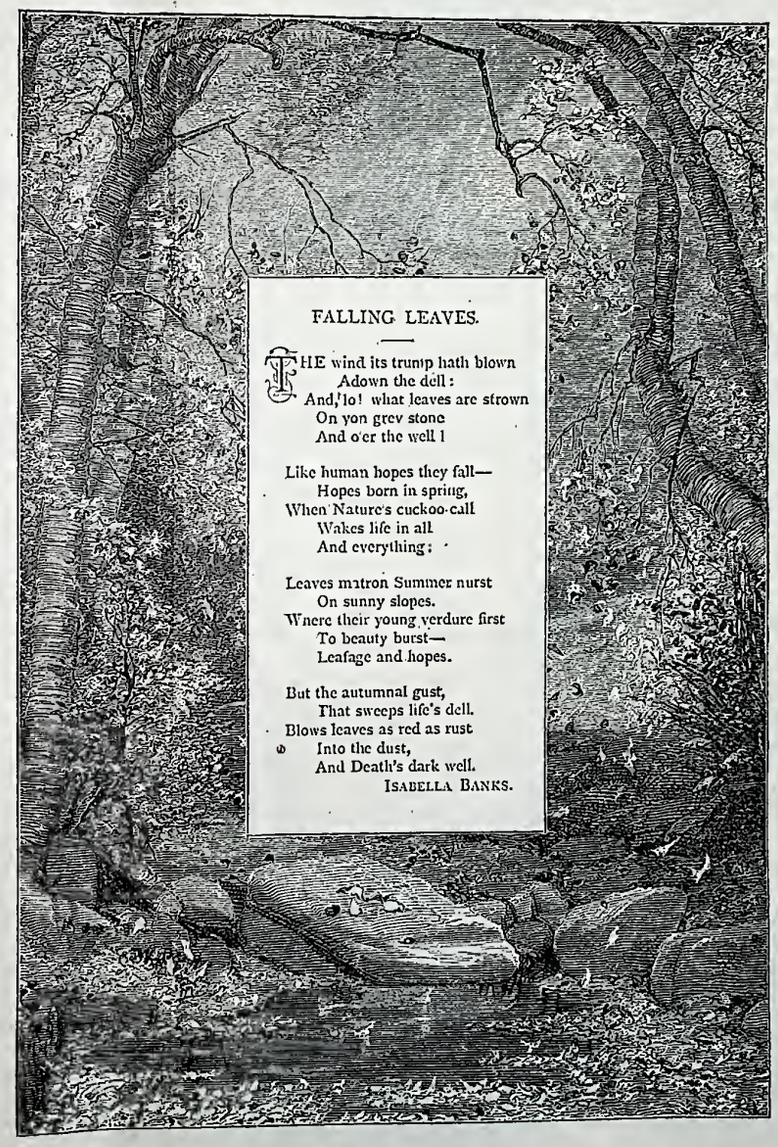
A set of the yearly volumes of THE AMERICAN GARDEN contains more reliable practical information about the cultivation of Flowers, Fruits, Vegetables, and any and every branch of Gardening than many a whole library. Each volume is carefully indexed, so that any subject may be found in a moment. The volumes for 1882 and 1883 we have constantly on hand, and the present year's will be ready in December.

For One Dollar either of these will be mailed to any post-office in the United States. To those who wish to obtain them free, we make the following liberal offer:

To any one sending us Ten Dollars for ten subscribers to THE AMERICAN GARDEN for 1885 we will send, free of all charges, the set of three volumes.

To any one sending us Four Dollars for four subscribers to THE AMERICAN GARDEN for 1885 we will send, free of all charges, either one of the three volumes he may choose.

Each member of such a club will receive the remaining numbers of this year free, and will also be entitled to one of the premiums named on page 221, the same as if the subscription had been forwarded singly.



FALLING LEAVES.

THE wind its trump hath blown
Adown the dell:
And, lo! what leaves are strown
On yon grey stone
And o'er the well!

Like human hopes they fall—
Hopes born in spring,
When Nature's cuckoo-call
Wakes life in all
And everything:

Leaves matron Summer nurst
On sunny slopes.
Where their young verdure first
To beauty burst—
Leafage and hopes.

But the autumnal gust,
That sweeps life's dell.
Blows leaves as red as rust
Into the dust,
And Death's dark well.

ISABELLA BANKS.

INDEX FOR 1884.

WITH our next number will be sent, free, to all old and new subscribers, a complete alphabetical index for the current volume, in addition to our regular number of pages.

RENEW SUBSCRIBE NOW!

Remember that every person sending a renewal of, or a new subscription to, THE AMERICAN GARDEN for 1885, NOW, is entitled to the remaining numbers for 1884, *free of expense*, also to any *one* of the premiums offered to single subscribers. Those who are already subscribers for 1884 may have the remaining numbers of this year sent to any address they may designate, *free of expense*.

ABOUT BOOKS.

Failure may be guaranteed to any one embarking in a new enterprise who neither avails himself of the experience of others, nor takes pains to inform himself by reading on the subject. Judicious persons will make use of both of these means of information.

Books were formerly the principal, if not the only, source of information through reading, but the periodal publications of the present day have, to a considerable extent, superseded books. Specialists who in former years would have written books are now—if they wish to reach the greatest number of readers—devoting their time and work to magazines. The perfect journal does not give the ideas and views of one brain only, but it draws together within its pages and disseminates the best thought, the most reliable teachings, and the results of the experiences and experiments of all the best workers in its special field everywhere.

Such a paper, in the horticultural world, is THE AMERICAN GARDEN. However complete a library you may have, and how many papers come to your table, if you are at all interested in gardening or any branch of it, *you cannot do without it.*

FRIENDLY WORDS.

Of all the agricultural papers I have ever seen, I prize THE AMERICAN GARDEN most highly.—*R. S., Akron, O.*

I am well pleased with your excellent monthly. It looks well, reads well, and best of all, is full of practical knowledge.—*Mrs. M. J. P., Lynn, Mass.*

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The Vegetable Garden.

SEASONABLE HINTS.

Celery.—If banked up too early, becomes very liable to rust and rot; and, except what is wanted for early use, need not be banked up at all; it will bleach during its winter storage. Thick wrapping paper tied around the stalks has been found to answer the purpose satisfactorily.

Wintering Celery.—The digging of trenches as deep as the Celery is high, and eight or ten inches wide, placing the plants with their roots and the adhering soil upright and close together in these, giving sufficient protection against freezing as the weather grows colder, is still the usual way of preserving this delicious vegetable.

Last winter we tried the experiment of leaving the plants in the ground where they grew, without taking them up at all, and the result proved so satisfactory that we shall leave all of our crop outdoors the coming winter. About the middle of November the plants received their final banking up, so as to cover all but the tips of their leaves. Early in December about six inches of additional soil was thrown on the top of the ridge, and all well patted down with the back of the spade. Leaves raked from the lawn and old corn-stalks were placed on the ridge a few inches thick, and on the top of this some branches of an old unsightly Norway Spruce which had just been cut down. The soil froze a few inches, but there was never any difficulty in digging the Celery, which remained as sound and fresh as could be and improved constantly in quality. About every two weeks we dug a good-sized soap-box full, which was placed in the house-cellar for the family supply. The last digging was about "Pea-planting time," and we are sure it was not less delicious than the first.

Keeping Squashes.—The best keeping variety is undoubtedly the Hubbard, but last winter we kept Perfect Gem in good condition till the end of January, when the supply gave out. The principal condition for keeping Squash is to gather them before they are injured by frost. It is thankless work to try to keep them after being frosted. It is also important that they should be handled carefully, so as not to bruise or chafe the skin. They should be placed in single layers on shelves in a perfectly dry place, where the temperature does never fall below 40°. A cellar best suited for keeping Apples or common Potatoes is too warm for Squashes.

Sweet Potatoes require about the same temperature as Squashes. They should be carefully handled, placed in barrels or boxes, and covered with sand or dry soil.

Water-cress is constantly growing more in favor as a winter relish. Cuttings may be made at any time this month, and planted about four inches apart on a greenhouse bench. The terminal shoots three to four inches in length are best for this purpose. They require rich soil, full sunlight, and plenty of fresh air on all mild days, else they are liable to "damp off." Three or four crops may be taken off during the winter months.

POTATOES FOR SEED.

There exists quite a diversity of opinion among Potato growers as to the portion of Potato to plant. It is a custom with many to cut off and reject the seed-end, and the results of trials, oftentimes conflicting, are quite often given to the public as proving one theory or another. When these experiments, however, are carefully studied, it becomes evident that the terms of the problem do not admit of exact representation in figures, but should rather be expressed in terms of greater or less.

With the view to determine whether one portion of the Potato is more valuable for seed than another, last year Dr. Sturtevant, director of the New-York Experiment Station, laid out a plat to be planted with single eyes, in order, as cut from the Potato. The Potatoes used, the White Star variety, furnished from 9 to 27 eyes apiece, and 30 Potatoes furnished the eyes requisite for planting 1-20 of an acre in drills $3\frac{1}{2}$ feet apart, each seed being placed at one foot distance in the drill. At harvest time, each Potato was gathered in three portions to be designated as the stem third, the central third and the seed-end third.

The total number of eyes planted was 582, and of these 16 from the stem-end, 5 from the center, and 4 from the seed-end failed to grow.

The total crop was 388.77 pounds of good Potatoes, 86.23 pounds of small Potatoes, and 192.62 pounds which were rotten. By multiplying by 20 the yield per acre will be obtained. In order to get figures which can be readily compared, the yield was calculated per 100 eyes, or 100 hills, and this may be represented by the following tables:

NO. OF POTATOES PER 100 HILLS, FROM

	Good.	*Small.*	*Rotten.*	*Total.*
Butt eyes	195	290	122	607
Center eyes	234	269	176	679
Seed-end eyes	229	256	147	632

YIELD IN POUNDS, PER 100 EYES PLANTED. FROM

	Good. Lbs.	*Small. Lbs.*	*Rotten. Lbs.*	*Total. Lbs*
Butt eyes	62.18	15.48	26.81	104.47
Center eyes	72.88	15.23	43.05	131.16
Seed-end eyes	73.73	15.72	33.41	142.86

The four eyes from the extreme seed-end of these same Potatoes, calculated in like manner, yielded, per 100 eyes, 213 good, 272 small, 150 rotten—total, 635 Potatoes; and the weights were 32.55 pounds of good, 20.33 pounds of small, and 40.32 pounds of rotten—total 143.20 pounds.

The lesson taught from these tables is that there is certainly no inferiority of the seed-end when used for seed. On the contrary the figures not only absolutely, but relatively, show a distinct advantage for the seed-end eyes in weight and crop, while the figures do not show the same advantage in the number of good Potatoes. That this relation is not an accidental one is made clear by the calculation of the yield of the four extreme eyes from the seed-end which give figures yet more favorable.

Indeed, the general summary of his experience with the Potato as heretofore represented, as well as the result of the present experiment, goes to show that the vitality of eyes used as seed improves according to the position they occupy upon the Potato toward the terminal position.

During the season of growth the plants from the central eyes showed slightly more vigor of growth than did those plants from the ends of the Potato. This fact was, however, so little marked, that it could only be observed by taking a comprehensive glance over the plat, which showed a slight undulation from the, in general, greater size of the central plants of the Potato.

Perhaps the influence of the position of the eye upon the Potato is best illustrated by the total yield from the 100 hills, which, as we have seen, is 104 pounds for the butts, 131 pounds for the centers, and 142 pounds for the seed-end eyes. Allowing 60 pounds to the bushel, and expressing our results in bushels, allowing each hill to have grown, we have, for the total yield, 206 bushels for the butt eyes, 259 bushels for the center eyes, and 282 bushels per acre for the seed-end eyes; or, for the yields of good Potatoes from the several kinds of eye, 123 bushels, 114 bushels, and 146 bushels of merchantable crop.

While one experiment hardly affords sufficient data for generalization, says the Doctor, yet an experiment as carefully conducted as this one, and with the method of planting, should possess some value as indicating the influence of position upon the seed eyes used. Yet we must remember, however, that if we had used more or less of the eyes in our trial the result would not have figured, in all probability, relatively the same. We can, however, truthfully express the fact that in this experiment we have gained increase of crop from the eyes taken from the seed-end portion of the Potato, and we may be justified in coming to the general conclusion that until further evidence is obtained the seed-ends, hitherto rejected by many, may be considered of equal value with that portion of the Potato usually selected for planting.

The summary for the Potato experiments made this year at the Station furnished scarcely any positive conclusions. There are, however, a number of inferences which can be drawn with quite an assurance of certainty, and which the Directors sum up as follows:

Single eyes used as seed yielded satisfactory crop per hill, and more uniform crop per hill than whole Potatoes or ordinary cuts.

Single eyes yielded a smaller percentage of small Potatoes than did ordinary cuts or whole Potatoes used as seed.

Ordinary cuts, upon the whole, yielded more favorable results than whole Potatoes, markedly so when the seed used is subtracted from the crop gained.

Single eyes cut deeply, so as to contain some substance, gave far superior yield to eyes cut shallow.

The small seed-end eyes gave results by no means inferior, but rather superior, to those gained from central and butt-end larger eyes.

Early planting showed far more favorably in crop than later planting, not alone in quality, but in total yield.

Too close planting diminished the yield of good Potatoes, and increased the yield of small Potatoes, by measure.

Fertilizer left over from last year's application exercised a marked influence upon the crop.

TOMATOES IN WINTER.

It seems strange that those who have greenhouses do not oftener grow Tomatoes during winter, as their management is quite easy, and a few pots properly cared for will give a constant supply all winter.

For this purpose it is best to raise the plants in pots, from cuttings made before frost has killed the outdoor vines. The young plants have to be repotted frequently, and finally in ten to fifteen inch pots. They should be trained to stakes or some form of trellis, as shown in our illustrations. The lateral shoots should be well pinched in to prevent the formation of too much foliage, and plenty of sun is necessary to their healthy development.

They may also be trained to the rafters of the greenhouse, and in a light, sunny plant room, where the other plants would not suffer by the shade, a Tomato vine might be trained around a window, and, if kept pruned properly, present a not unattractive appearance.

ROOT CULTURE.

When harvesting roots it is frequently observed that, while seemingly the best care has been given to the crop, it is not all that might be expected. A chief cause of this is that in the average farm-garden all seeds are put into the ground at about the same time. Very little thought is given to the difference in lengths of time needed for maturing the different varieties. The main idea seems to be to get the ground prepared and planted in one job, so that it will not call for another application in that line.

I have noticed this particularly with regard to the different root-crops. Onions, Parsnips, Beets, Mangel-wurzels, Carrots, Radishes, Turnips, etc., etc., are assigned their little spaces, and disposed of at one fell swoop, and the garden is laid aside, with, no doubt, a sense of duty well performed.

Now the largest share of these roots are intended for use during winter and spring, and if sown as early as the summer garden vegetables should be sown, they will mature in late summer or early autumn. Before cold weather sets in they will become shriveled up and tough, when they should be crisp and tender.

The fore part of June is early enough for sowing Beets, Carrots, Ruta-bagas, and similar roots that are intended for winter use, while winter Radishes and common Turnips may be sown two months later.

By the first of June the ground is usually in better condition, and can be made deeper and mellower than is possible where it is planted early in the spring. At this time the earth has usually become thoroughly warmed through, and there is much more certainty of the seed germinating than if put into the ground when it is cold and wet. The rush of work will be over, and the better attention can be given to this part of the gardening.

In preparing the ground for the seed, thus late in the spring, the first start of young weeds is killed out, and the young plants coming up quickly under the favorable conditions, stand a fair chance with them for an existence. Not so with those that have been sown early; they were a long time in getting up through the ground, and grew slowly for weeks afterward. The disadvantages under which the plants have labored do not seem to have retarded the weeds in the least, for the whole ground is matted over with them, and by the time the plants are well above ground, a search for them must be commenced although the rows cannot be distinguished except by a practiced eye and by the aid of imaginary lines.

HOOP TRELLIS.

Without any exaggeration, it requires double the labor to cultivate those sown early as it does those that are sown the fore part of June. We can endure this where it is necessary in order to procure early vegetables, but in raising roots for winter use, it is worse than useless.

Where roots are raised in considerable quantity, I would certainly have the rows as far apart as twenty inches, so that horse-power could be used for cultivating. The cultivator used should have small teeth that will not throw much soil, and then it can be run close up to the rows, and loosen all the surface of the ground thoroughly. This will save an immense amount of hand-work in weeding along the rows.

FLAT TRELLIS.

In thinning out, there is usually more hand-pulling done than is at all necessary. The hoe can be used in this work by cutting out spaces the full width of the blade, thus leaving the remaining plants in clumps which are much more quickly thinned out by the help so given. Carrots will do very well if these clumps are allowed to remain, as the plants have a chance to crowd out on every side. There are few roots that will stand as much crowding as the Carrot.

W. D. Boynton.

APPLYING MANURE IN THE FALL.

After winter grain is sown in the fall there is generally some spare time on the farm that can be profitably employed in carting and scattering all the manure available. My plan of hauling out manure is to plow the ground first, then scatter the manure on top and then harrow well. The natural course of manure is downward, and if it is applied upon the level ground and then turned under in the fall the best part of the fertilizing substances is buried too deep to be of any special benefit to growing crops.

While I do not advocate the use of fresh manure, especially in the garden or truck farm, preferring generally to pile it up and work over until well rotted; yet in the fall, if there is plenty of time and the soil has been plowed, I would haul out all the manure on the place, whether it was rotted or fresh.

I have never found it a profitable plan to put manure in piles and scatter afterward. A man can scatter better and more evenly from the wagon than he can on the ground, and he can spread a load almost as fast as he can unload in piles. Manure to be of the greatest benefit should not be too lumpy or scattered in heaps, but should be spread as evenly as possible so that one or two harrowings will work it well into the surface.

The advantage of fall manuring is that the soluble parts of the manure will soak into the soil and be available for the feeding roots of the crops planted in the spring. One of the principal causes of the failure of the first crop planted on land that has been well manured is that the fertilizer is not applied so as to render it available as plant-food. This is especially the case where fresh or coarse manure is applied in the spring.

N. J. Shepherd.

MORE ABOUT EARLY PEAS.

Commenting on "Elm's" "Talk upon Peas," in our last issue, B. F. O., of New Jersey, says: "I think sprouting Peas for early planting is a mistake; it has a tendency to weaken the seed. Peas can be planted out-of-doors as soon as the ground is thawed deep enough to get in the seed. I have planted Early Kent in March, and had Peas May 26th. When four inches high, they were snowed under. This year I planted Kentish invicta April 9th, and had first Peas June 13, and when the vines were done bearing they sprouted again near the ground, producing a second crop of larger and sweeter Peas."

[Differences of soil should be taken in consideration in this regard. While in a naturally dry and warm soil "planting as soon as the ground is thawed deep enough to get in the seed" may prove perfectly successful, in a heavy, cold soil seed thus deposited would in most seasons rot, or at best produce poor, sickly plants. This we know from oft-repeated experiments.—Ed.]

The Fruit Garden.

SEASONABLE HINTS.

Do not cover your Strawberries too early, is an injunction which we cannot too strongly impress upon our readers at this season. The novice in fruit culture is always in great haste to protect his plants so soon as the first snow-flakes fall or frost kills tender vegetation.

The object of winter-mulching being to prevent the ground from too frequent thawing, it is evident that any process that guards it against freezing does more harm than good. Of course, it is possible to mulch plants so heavily as to keep the ground from freezing at all, but not without smothering or seriously injuring them, unless they were in a cold frame.

In this latitude it is not advisable to cover Strawberry plants much before the last week of this month, and never before the ground is frozen hard. Freshly cut evergreen branches, the concave side placed downward, make the very best and most conveniently applied covering material, and may be turned to the additional use of serving as Pea-brush the following summer, for which the straighter branches are excellently adapted. On farms or country places, where some out-of-the-way land is available, it would be worth while to plant a number of Norway Spruce or other quick-growing evergreens for this purpose alone. In the absence of evergreen branches, straw, leaves, or corn-stalks may be used. A covering of two or three inches at the utmost is sufficient.

Root Cuttings.—Blackberries, and all varieties of Raspberries that sucker freely, may be propagated by root cuttings; and when it is desired to increase a new or scarce kind as rapidly as possible, this is the plan pursued.

At any time after the plants have ceased growing, and before the ground freezes to a great depth, the roots are dug up and cut in pieces of about two inches in length if for outdoor propagation, and much smaller when to be started on a cutting-bench. If it is desired to preserve the old bushes, some of the roots may be cut off at about a foot from the stools, without detriment to the parent bush.

These pieces are then put into a box, by first scattering an inch or two of soil over the bottom, on which a layer of cuttings is placed, then a layer of soil, a layer of cuttings, another layer of soil, and so on till all are disposed of, when the box is filled with soil to the brim. They may be wintered in a cool cellar,—a warm place will not do,—examining them occasionally, and moistening the soil if it should become so dry as to cause the roots to shrivel. Or the box may be dug in the ground outdoors on some dry spot, and covered sufficiently with soil to exclude frost.

In spring, as soon as the ground is fit for working, they are to be planted about six inches apart, in drills two to three inches deep and eighteen inches from each other. The planting consists in simply placing the pieces in the drill, covering with fine soil, pressing down firmly, and filling up the drill.

COVERING AMPUTATED LIMBS.

When limbs of considerable size, or indeed any limbs not so small as to heal over in one or two seasons, are removed from a fruit-tree, it is very desirable that the wound should be covered with something to protect it from the weather. If this is not done, rot will soon commence, and extend rapidly inward and downward, affecting the whole tree below the wound, making it unsound as well as short-lived, and more or less unproductive while it does live.

Various preparations are recommended and used for this purpose, most of them being cements of a water-proof character, such as grafting-wax, a solution of shellac in alcohol, or "mastic," made by boiling pine tar to expel most of the volatile matter, adding about ten per cent. of bees-wax and thickening with finely powdered clay, six or eight ounces to a pound of tar. This is added to prevent the cement from running, under the heat of the sun. We have used such a cement for many years, and have found it preferable to any other of a similar character. Shellac scales off, and does not yield to the growth of the wood and bark as the wound heals over. Grafting-wax becomes oxidized and crumbly, cracking and splitting off so as to expose the wood, on large cuts, before they are well healed. But the tar mastic never scales off, cracks, or becomes hard. It will be found still perfect in the form of a ball adhering to the center of the scar, after healing is complete. On trees of vigorous growth, hard-wooded and entirely iron-clad, like the Siberians and Russians, it answers every purpose.

THE RANCOCAS RASPBERRY.

But all these various water-proof cements have the serious defect of not only excluding moisture from without, which is desired, but also of confining the moisture from within, which is, of the two, the more potent cause of decay. For several years past I have been using for this purpose the ready-ground paints put up in tin cans. The ochre paints, Venetian red, common (not chrome) yellow, raw or burnt sienna, and the like. As they come in the cans they are quite thick, requiring to be thinned for ordinary painting, but just right for covering tree wounds. I use a small flat badger brush, an inch or an inch and a quarter wide and rather thick, for applying the paint, and find one coat usually enough, though as I go around the orchard every spring to cover the new cuts I often give the old ones of large size another dab. If you desire to make the wounds conspicuous, so as to be easily seen and repainted, Venetian red is the best paint to use for this purpose; but if, on the contrary, you desire to make them inconspicuous, raw sienna gives a color nearest to that of the surrounding bark.

This application has the great merit of allowing the transpiration of inward moisture, while excluding external wet. Trees with the least tendency to black-heart (which indicates injury from severe cold, and a lack of hardiness of the iron-clad sort), will always "bleed" more or less from cuts, the disorganized sap oxuding and loosening the shellac, wax, or mastic covering, and often running down and blackening the bark. I have not seen any of this where thick paint has been used, the inward moisture evaporating through the paint covering as fast as it comes to the surface. I consider this a great advantage, as the overflowing sap has a cankering effect upon the bark around the wound, and prevents healing. It also seems to injure the bark of the trunk over which it flows.

S. H. HOSKINS, M. D.

THE RANCOCAS RASPBERRY.

Among the new fruits to be introduced the coming season this chance seedling Raspberry seems, according to the opinion of several experts, to be one of the most promising. Not having seen the berry ourselves we give the description by Mr. A. Hansell, on whose farm it was found:

"I found the Rancocas in a most unfavorable spot, surrounded by briars, and in every way neglected. Its vigor, productiveness, size, and earliness led me to transplant it. The bush starts late in the spring, when it branches freely. These branches *load* themselves with fruit, so as to almost conceal the leaves, presenting a mass of solid, red, ripe berries. This habit of the bush, in connection with the fruit ripening so quickly, renders it the easiest and cheapest variety to pick that we have ever grown. It is a common remark of our pickers that they would rather pick the Rancocas for two cents per quart than any other variety for three cents.

"The plant suckers freely, and so vigorous is it that it effectually smothers the quack grass that would otherwise overrun our ground. We do not head back the suckers, or even trim out the old fruiting canes during the summer; but in the fall, after the rush of work is over, we go through and cut out the old canes, and thin out the suckers, leaving only sufficient for the next season's fruiting. The canes left for fruiting are then headed about two and a half feet from the ground. It is the busy man's if not the lazy man's berry.

"It will produce twice as many quarts per acre as the Brandywine. The bushes have never been in the least injured by the severest winter weather, and the foliage has never shown a trace of yellows, scald, or burn."

THE MAY KING STRAWBERRY.

Another new candidate for public favor and supremacy in the field and garden, at this time, is the May King Strawberry, well represented in our life-like illustration. It is now first offered by John T. Collins, of Moorestown, N. J., who says:

"Of Strawberries in fruit, the past season, the best that I saw, taking all points into consideration, was the May King, a seedling raised by Thomas Zane, of Camden County, N. J., from seed of the Crescent, and he claims it earlier than the Crescent.

"The vine is very vigorous and healthy, productive, with perfect blossoms; the berries are of large size, very bright scarlet color, and of best quality.

"Thomas Zane had one-quarter acre in fruiting this season on sandy loam, moderately rich soil, from which he picked, May 24th, 12 quarts, and during the season 1822 quarts, which sold at wholesale for $330.

"I never saw a finer crop of nice fruit than of this variety, and intend to plant it largely for fruiting for market, and do not hesitate to recommend it either as a profitable market berry or one that will give best satisfaction to amateurs."

THE MAY KING STRAWBERRY.

GRAPE CUTTINGS.

Of the different fruits, Raspberries and Grapes only give me complete satisfaction. These never fail to yield a full crop, and I find it no trouble to secure a healthy growth of wood. A Pear, Plum, Peach, or an Apple orchard, or a Strawberry patch, I can maintain only at the price of unceasing vigilance.

I propagate Grapes entirely by cuttings, and have always had highly satisfactory results. The plan I have pursued during the past two or three years is this: I take the cuttings either at the time when I prune the vines in autumn (which is the easier and better plan) or later. If I select them at the former time, I plant them at once. For this purpose a rich, loamy, warm soil is necessary; and it must not bake or crack. If the cuttings are not made at the time of pruning, I pack them in damp earth in the cellar. It will do as well to place them in the open ground, if they are protected from freezing. They are thus allowed to remain till spring, when they are planted out.

The best soil for cuttings is a light, porous one; and I have to make mine so by the addition of sand. To plant, open a trench six or seven inches deep. This can be done with a single diamond plow; but better, though slower, work is done with a shovel. It is a good plan to stretch a line and make the trench along one side of it. The side of the trench nearest the line should slope toward it at a considerable angle. This work is done as soon as the soil can be stirred in the spring. The cuttings are laid against the sloping side, five or six inches apart, and placed so that the upper bud is just below the level of the surface. I then fill the trench till the dirt comes above the lower bud, and make it solid. I then take a light spadeful of fine earth and press it against the cuttings, covering all but the top. This dirt should be patted with the back of the spade till it is quite compact, and should then form a layer about half an inch thick. The trench is left in this condition—partly open—till the beginning of the growing season. Then the side of the trench next the cuttings is given a liberal application of fine, well-rotted manure. The filling of it is completed with the hoe or cultivator in rooting out the first foreign growth which appears. But if the weather is drought (which is not the case here one spring in ten, however), I fill the trench sooner. I make the trenches east and west, with the slope facing the sun. This I consider a point of considerable importance.

Cuttings must be of well-ripened wood. Some say to take large ones, but I prefer a medium size. They may have only one bud, or as many as can be cut on a growth of six inches. Perhaps two or three buds are the best numbers. Cut immediately below the lower bud and about an inch above the upper one. Make a smooth, slanting cut, on the side opposite the bud. Cuttings of single buds are generally made when wood is scarce, or when the variety to be propagated is rare and valuable; but such cuttings are often made when common varieties are to be propagated extensively.

With cuttings of a single bud I have not had so much experience. They are placed horizontally (end upward) in clean, sharp sand. They are covered to a depth of half an inch. The sand is kept moist, and as roots are produced more slowly and at a lower temperature than leaves, at a temperature of 40° or 50°, to encourage the growth of roots. The air above the sand should be several degrees yet colder. After a sufficient root formation has formed, the temperature of the sand is gradually raised. When the plants have made a growth of two or three inches they are "potted off," which must be done two or three times during the summer, each time using larger pots; or the plants may be put in a cold frame and gradually hardened till they can bear exposure.

"Mallet cuttings" are made by leaving a short section of the older wood attached to the cutting, or by using strong laterals with a portion of the cane attached. This requires much wood, as only one cutting can be made of each shoot or lateral. The only advantage mallet cuttings have over ordinary ones is that in the case of light cuttings the mallet increases the probabilities of success, as it furnishes additional material for the needs of preliminary growth.

JOHN M. STAHL.

FALL PLANTING STRAWBERRIES.

To the question, What are the wants of the Strawberry when planted in the fall? the veteran Strawberry-grower, M. Crawford, of Ohio, answers as follows:

"Now, what are the wants of the Strawberry when planted in the fall? The soil for the Strawberry should be rich and moist, but not wet. It matters not whether it be sand, clay, or muck, so that it furnishes anchorage for the plant and contains an abundance of the elements necessary to its growth. It should be stirred to a good depth, but little or no poor subsoil should be brought to the surface. It is well to have it prepared some little time in advance, so that it may have time to settle somewhat before the plants are set. The surface should be rich. This is especially important with fall-set plants, as their roots have comparatively little time to go far in search of food.

"There is another advantage in encouraging surface roots; they are not drawn out nor broken by the expansion of the water in the soil when it changes to ice, but rise and fall with the ground. Roots that run deep are apt to be broken or drawn out—as Red Clover—while White Clover roots remain uninjured, although frozen and thawed a dozen times. If the soil has been enriched for a previous crop, so much the better; but if not, well-decomposed stable manure may be worked into the surface either before or after setting the plants."

The Flower Garden.

THE GOLDEN FLOWER.

(Chrysanthemum.)

Ere Advent dawns with lessening days,
While earth awaits the angel's hymn,
When bare as branching coral sways
In whistling winds each leafless limb,
When spring is but a spendthrift's dream,
And summer's wealth a wasted dower,
Nor dews nor sunshine may redeem,
Then autumn coins his Golden Flower.

Soft was the Violet's vernal hue,
Fresh was the Rose's morning red,
Full-orbed the stately Dahlia grow—
All gone! Their short-lived beauty shed;
The shadows lengthening stretch at noon,
The fields are stripped, the groves are dumb,
The frost-flowers greet the icy moon—
Still blooms the bright Chrysanthemum.

The stiffening turf is white with snow;
Undimmed its radiant disks are seen,
Where soon the hallowed morn will show
The wreath and cross of Christmas green,
As if in autumn's dying days
It heard the heavenly song afar
And opened all its living rays—
A herald-lamp of Bethlehem's star.

Orphan of summer, kindly sent,
To cheer the waning year's decline,
Of all that pitying heaven has lent,
No fairer pledge of hope than thine;
Yes! June lies hid beneath the snow
And winter's unborn heir shall claim
In every seed that sleeps below
A spark that kindles into flame.

Thy smile the scowling storm-cloud braves,
Last of the bright-robed flowery train,
Soft sighing o'er their garden-graves,
"Farewell! farewell! we meet again!"
So may life's chill November bring
Hope's golden flower, the last of all
Before we hear the angels sing
Where blossoms never fade and fall.

OLIVER WENDELL HOLMES.

SEASONABLE HINTS.

November may well be termed "*the Chrysanthemum Month*" as appropriately as June "the Month of Roses." Chrysanthemum shows are becoming as established and attractive features in the proceedings of our horticultural societies as any other special exhibitions of the year. It is safe to assert that in no other class of plants has so much and so rapid improvement been made as in this; and those who have never seen the newer varieties can hardly form an idea of their glorious beauty, and should not miss an opportunity of visiting some of the special exhibitions to be held in most large cities during this month. The principal types of Chrysanthemums are well shown in the excellent illustration, for which we are indebted to Mr. A. Blanc, the celebrated artist of Philadelphia.

Autumn-sown Flower Seeds.—Wherever the hardier kinds of annuals, biennials, and some of the perennials have been growing, and the ground has not been disturbed, many young plants will be found coming up in the beds the following spring. These self-sown seedlings are generally better and will bloom earlier than those from spring-sown seed, plainly showing the advantage of sowing this class of plants in autumn, especially those wanted for early blooming. Most biennials sown in the fall will bloom the following summer, if lightly protected during winter.

NEW ROSES.

The number of new Roses introduced this autumn is not inferior to that of previous seasons. Some of these novelties will, of course, never supplant any of the many valuable older kinds, but others are decidedly distinct and possess real merit. As it may interest and serve as a guide to the readers of THE AMERICAN GARDEN, I have condensed the following list as comprising the very best introduced this season by French growers.

TEAS.

Annette Murat (Levet).—Lemon-yellow, free bloomer, very fine.

Alexandrine Bruel (Levet).—Very pure white, fine shape.

Charles Legrady (Pernet fils).—Light crimson or dark pink, best shape, nearly full.

Souvenir de Gabrielle Drevet (Guillot).—Large, full, white, shaded light salmon, center rose.

HYBRID PERPETUALS.

Nathaniel de Rothschild (Pernet père).—Very large, globular, nearly full, delicate tender rose.

Admiral Courbet (Dubreuil).—Fine shape, full, pinkish carmine, exquisite fragrance, very free bloomer.

Madame D. Wettstein (Levet).—Cherry-red, very free bloomer, fine shape.

Doctor Dor (Liabaud).—Very large, full, dark cherry-red, shaded darker, scent of Teas.

Etendard de Lyons (Gonod).—Large, fine shape, purplish-crimson.

Madame Pitaval (Liabaud).—Large, full, light cherry-red, good shape.

Madame Stingue (Liabaud).—Large, purplish-red, fine.

Monsieur Hoste (Liabaud).—Large, full, velvety crimson, good shape, very fine.

Gloire Lyonnaise (Guillot).—Large, full, fine shape, vivid creamy-white, center yellowish, fine fragrance, very free bloomer.

BENGAL.

Jean Sisley (Dubreuil).—Medium size, full, fine shape, pure white, very free bloomer, very desirable for pot culture and forcing.

Lyon, France. JEAN SISLEY.

THE DWARF NASTURTIUM.

(Tropæolum nanum.)

One of the best annuals we have for bedding purposes where vivid masses of color are desired, is the Tropæolum, or Nasturtium—"Sturtion," our grandmothers used to call it. Some varieties are given to climbing in a kind of straggling, sprawling fashion, which unfits them for any very effective use anywhere; but the dwarf varieties are very good for beds, not growing much over a foot in height, and spreading out into well-shaped plants, which will be covered the greater part of the season with brilliant yellow, maroon, and velvety crimson flowers. Some varieties are a pale sulphur yellow, striped and spotted with vermilion.

This summer I had some in my garden that were almost a pink,—a sort of rose-color suffused with buff,—very unlike any I had ever seen before, and, though not as showy as the darker varieties, they were really prettier. This flower is extensively used for bedding purposes. The foliage is a pea-green usually, and shows off the brilliance of the flowers well.

* *

SPRING FLOWERING BULBS.

During this month, and frequently until late in December, the lovers of beautiful flowers can plant hardy bulbs, which will bloom from early spring into the autumn and delight the eye, while they perfume the air with their sweet odors.

"Well they reward the toil,
The sight is pleasant, the scent regal;
Each opening blossom freely breathes around
Its gratitude, and thanks us with its sweets."

When scarcely a blade of green grass is to be seen, their tiny leaves, closely shrouded in a green hood, push forth from the ground, and in a short time the most fragrant flowers, and also those of the gayest and loveliest hues, repay us for all the labor expended upon them.

Good sound bulbs are requisite for perfect success, and yet the highest-priced bulbs will not always give the best satisfaction. The beds in which bulbs for early flowers are planted should be well cultivated, *i. e.*, a portion of the soil should be taken out, and a good supply of year-old stable manure should be dug in deeply. Then restore the soil, and mix it with at least one-third sand. A sunny location, and one exposed to the morning and midday sun, will make the best position for a new bed. It should be raised several inches above the turf or walk, to enable all the rain and moisture to drain off and not settle upon the bed. Raise it in the center, and let the sides slope very gently.

Most spring flowering bulbs may be planted directly, amidst the shrubbery, or in beds of perennials, the tops of which are to be cut off when decayed. There is room for bulbs in the smallest of gardens, as the most of them will have finished their work of beautifying the earth before other flowers are in bloom. According to localities the time for planting bulbs should be decided, and before the ground freezes they should all be snugly laid away to await the resurrection of the spring.

THE HYACINTH.

The Hyacinth, so aptly called the *Domestic Flower*, because it is so greatly loved by many hearts, is the most desirable of all early flowers. Haarlem, in Holland, is the chief source from whence come the thousands and hundreds of thousands of bulbs imported to this country. The florists of that city make their culture a strong feature of their nursery gardens, and the soil is exactly adapted to them, being of a light vegetable mold, well mixed with sand, and a substratum of sand, which drains off the heavy rains of early spring.

In making separate beds of Hyacinths for decorating the lawn, and edging them with Snow-drops and Crocuses, remove the soil at least a foot in depth, and spread over the bed a compost of one-third well-decayed stable manure, one-third leaf mold, or rotted sods, and half the quantity of the whole compost, of a sandy loam. Spade up this mixture well, and let it lie a few days, then spade again. But if you can procure the black, sandy soil under the forest's pines, you will have exactly the compost fitted for growing all kinds of bulbs. Plant the Hyacinths in circles, clusters, or straight rows, and at the depth of two, three, or four inches, according to size of bulb. Have a panful of scouring sand close by (not sea-

sand), and at the bottom of each bulb put in a small handful of sand, then press the bulb down upon it closely. Dig the holes with a small trowel, and press down the soil well. When the ground is frozen solid, spread over the beds a layer of four to five inches of leaves, or straw, or coarse stable litter. This will keep the ground from alternately freezing and thawing, which is so apt to kill the bulbs. When first planted, a top dressing—half an inch or more—of sand will help to draw the heat of the sun in early spring. When a part of the strawy covering is removed, which should be done as soon as the tops of the sheathed leaves are seen, press the soil closely round each bulb, to prevent the cold night air from injuring the flower, and in a fortnight or so take off all the winter coverings, and soon the flowers will appear.

In the choice of bulbs, select those which are firm and solid at the base of the root. For outdoor culture, the double varieties are the most showy, as their flowers will form an upright cone of perfect beauty. Also due heed should be given to their height of stem and flower and their time of blossoming. The early varieties of tall growth should fill the center of a bed to be edged with Crocus and Snow-drops, and the spaces can be filled in with other kinds of low early bulbs. Some thought should be given to the mingling of the shades—dark and light blue, porcelain, and white, and of the shades red, carmine, rose, and blush; also of the tints of yellow and cream color. A bed of Hyacinths makes one of the rarest of flower shows in spring-time, and seems an almost indispensable adjunct to every real flower garden.

THE TULIP.

This "Fop of Flowers," as it has been correctly styled, is truly a gorgeous addition to the flower beds, and so easily are they raised that clumps, clusters, or whole beds of them, should be planted this month or next; and then one can patiently wait for the time when a blaze of glory will attract every passer-by, as well as fully repay to one's self all the care and expense in their gorgeous brilliancy. They are natives of Persia, and called *Tulip*, from *tulipan*, a turban, which the calyx of the flower resembles. The Turks brought the bulbs from thence, and sent some of them to Vienna, where they were cooked like Onions, and not proving palatable, were then preserved in sugar; but not being a success as *compotes*, the remainder were thrown upon a compost heap, where they grow and bloomed in perfect beauty. The Swiss botanist, *Conrad Gesner*, did not see the Tulip until 1559, and as he described it scientifically, *Linnæus*, many years after, gave it the specific name of *Gesneriana*, in honor of the botanist *Gesner*.

TYPES OF CHRYSANTHEMUMS.

The Tulip mania of the seventeenth century, doubtless, all our readers are familiar with, as it belongs to the *History of Holland*, having commenced there, but its influences were transplanted to England and France, and had not our mother country been engaged in civil war, the speculations might have been as ruinous there as among the Dutch. It proceeded, however, from the love of gambling, far more than the love of flowers, and Tulip bulbs were sold on time, as stocks are at the exchange, and those that were short were as badly shorn as are the "lambs of Wall street." But the Dutch amateur florists loved their bulbs as much as rosarians now love their Roses, and the poet Crabbe wrote of them:

"With all his phlegm, it broke a Dutchman's heart,
At a vast price, with one loved root to part."

Tulips are divided into three classes, viz.: *Roses*, *Byblomens*, and *Bizarres*. The *Roses* have rich crimson, cherry, pink, and scarlet stripes and veinings on a pure white ground; they grow eighteen inches high and have large, well-formed cups. The *Byblomens* are marked with black, lilac, and purple stripes and veins on a white ground; while the *Bizarres* have a yellow ground, feathered and veined with scarlet, pink, purple, lilac-crimson, rose, and cherry. These classes are again divided into flamed and feathered, striped and veined Tulips, until their number is multitudinous. A feathered Tulip has a dark-colored center, shading lighter toward its edges.

Besides these there are the dwarf *Duc Van Thol* varieties, which bloom the earliest and will make lovely beds of flowers, mingled with Hyacinths, Crocus, and Snow-drops. The *Tournesol* varieties bloom next to the *Van Thols*, and the two kinds, when planted together, will make a gorgeous bed in spring. The *Double Tulips* and the *Parrot Tulips* come next in order, the latter being the most unique of all the varieties, the edges of their petals being fringed like fringed Petunias. These two kinds can be mingled in a bed, which will prove extremely brilliant; or, if planted around low Evergreens, in a circle or in groups, they will show to great advantage.

Sandy loam from sheep or cow pastures is excellent for the growth of these bulbs. Remove the sods from old pastures and dig up wheel-barrow loads of the fresh soil; or prepare a bed as directed for Hyacinths. Rich garden soil, mixed with very old manure and sand, will grow the Tulip in its perfect beauty, but fresh compost from the cow-yard or stable would burn up the bulbs. Plant them early in the season, and set them from three to four inches in depth, and four inches apart. Put a little sand at the base of each bulb, and scatter sand all over the bed, and protect like other bulbs, with leaves or straw compost. After flowering let the leaves dry up, then cut them off. Every three years take up all the bulbs and remake the bed, or plant them in another place.

Crocus, Daffodils, and Lily of the Valley require similar treatment, and are all needed to make up a complete spring garden.

DAISY EYEBRIGHT.

The Window Garden
AND GREENHOUSE.

THE WINDOW GARDEN FOR NOVEMBER.

DISPOSITION OF PLANTS.

By arranging your plants so that all of them may be suited, as your convenience will best allow, as regards a high or low temperature, sunshine or shade, you may be able to provide for quite a number of your pets.

Geraniums, Fuchsias, Carnations, Petunias, Ageratums, Meteor Marigolds, Mignonette, Sweet Alyssum, Stevias, and Abutilons in blossom like a sunny place in the window, but not a high temperature; merely keep out frost. Tea-scented and China Roses, Callas, and Begonias also like a sunny window, and warm but not close quarters. Of course these are as hardy as those before mentioned, but in order to get them to bloom well in winter we have to humor them a little.

Chinese Primroses like an east or west-facing window, but if shaded from strong sunshine by a piece of paper or muslin, will thrive in a south-facing one, or, if need be, will bloom nicely in a north or sunless window. Oxalises should be suspended in sunshine. Bouvardias, although warmth-loving plants, will bloom well associated with Carnations. Cinerarias and Calceolarias love the light, but dislike direct sunshine. Grow them in a cool temperature; merely exclude frost.

Coleuses, Iresines and Alternantheras, either as old plants or rooted cuttings in store pots, prefer warm, sunny quarters. Rooted cuttings of Lantanas, Heliotropes, Ageratums, Verbenas, Salvias, Fuchsias, Abutilons, and Geraniums will do with less warmth and sunshine, and may be kept toward the inside while the plants in flower are placed next the windows. At this season these cuttings require but little water, our chief object being to discourage growth, and to keep them as inactive as possible till spring, without hurting them.

Oleander, Camellias, Azaleas, Sweet Bay, Orange-trees, Tea plant, Banana shrub (*Magnolia fuscata*), and English Ivy will do well in a cool room and a north-facing window; of course they would like some sunshine, but in winter it is not indispensable. Indeed, except the Orange-trees (I never like to put them in the cellar), if need be, we may winter these plants safely in a cellar having an average temperature of 35° to 45°, when, although they shall not need much water, we must never let them get very dry at the root.

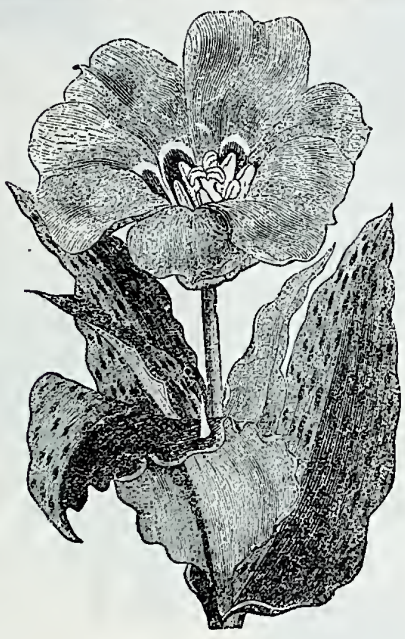
Ferns of all sorts should be kept in full or partially sunless windows, and never be allowed to get dry. Cactuses of all sorts enjoy light, sunny quarters, but they are very accommodating plants, and providing we keep them dry, we can safely winter them in the most sunless windows we have.

Hard-wooded plants, Abutilons, Lantanas, Fuchsias, Lemon-scented Verbenas, and Grape Myrtles, either pot-grown or lifted and potted, and cut back from outdoor plots, may also be safely wintered in frost-proof cellars; in the case of recently potted plants the roots must be kept a little moist through the winter, but if they are pot-established plants, getting pretty dry is not likely to hurt them.

Yuccas, Century Plants, and large Cactuses may also be wintered in cool but dry and frost-proof cellars. Canna, Dahlia, and Caladium roots may likewise be stored in a dry place.

FROZEN PLANTS.

When we winter plants in our dwelling-houses, we should never let them get frozen. Out-of-doors, in the open garden, hardy plants submit to frost with impunity; but these same plants, if grown in pots and then subjected to hard frost, would get more or less injured. How much more, therefore, would be the injury done to tender plants, or even half-hardy ones, when subjected to frost? But in the event of some of our house-plants getting frozen accidentally, as soon as discovered we should place them in a low temperature, only a few degrees above the freezing-point, and keep them dark, till the frost has altogether left them, and for some days afterward we should keep them



TULIPA GREIGI.

cool and away from sunshine. If the soil in the pots is frozen hard, bury the plants, roots, and stems in earth or sand in a cool cellar, so that it may thaw out gradually. Should Heliotropes, Coleuses, or other tender plants get "burned" by frost, it is utterly impossible, no matter how soon we "catch" them, to restore to health the leaves or shoots that get frozen. But Geraniums, Century Plants, and many more may bear slight frosts without apparent injury.

WATERING PLANTS.

Don't overwater your plants. Carnations, Callas, Justicias, and other fast-growing plants, now in active growth or coming into bloom, require plenty of water; succulent plants of all kinds, very little; evergreens, merely to be kept moist; and plants being wintered over for next summer's garden, merely water enough to keep them from wilting. If any of your plants are sick, keep them dry rather than wet, and never, under any circumstances, give liquid manure or other stimulants to a sick plant.

WM. FALCONER.

GREIG'S TULIP.

(Tulipa Greigi.)

This as yet rather rare new Tulip is a native of Turkestan, and is one of the most showy and distinct species in cultivation. Its large, goblet-shaped flowers are originally bright orange scarlet, but they vary also to purple and yellowish. The leaves, the margins of which are boldly undulated, are of glaucous color, the entire upper surface being brightly spotted with purple or chocolate brown. The plant is a vigorous grower, its stalks reaching a height of twelve inches or more, and the diameter of its flowers from four to six inches. For forcing in pots in the house, or for outdoor culture, it is equally well adapted.

THE PASSION FLOWER.

(Passiflora.)

Not only in collections of greenhouse plants do we see the different species of Passion Flowers cultivated, but also by persons who have no other accommodation for keeping plants but the window; and it is with remarkable success that some window gardeners manage to grow most of the hardier species. As THE AMERICAN GARDEN is found in more homes in Ohio than any other horticultural paper published, and it is for the benefit of its readers that I write, these suggestions about the cultivation of one of the most beautiful climbers will reach the eye of more flower-lovers than through any other means.

Passion Flowers are rapid and rampant growers if liberally treated. The best soil for them is good fibrous loam, thoroughly rotted manure, and well-decayed leaf mold, adding sufficient sand to insure the free percolation of water. Commence to train the shoots when small, and continue to do so, else they will soon get tangled, so that it is difficult to train them properly when allowed for even a short time to grow at will. They require plenty of room, both for roots and tops, and when growing rampant, plenty of water. Unless properly attended to in this particular, they lose their leaves on the mature wood, and soon show a mass of unsightly stems, which deprives them of half their beauty. The best place to train them during summer is on the veranda, or on trellises erected for the purpose in the garden.

Many of the species may be taken from the pots and planted in the open ground, using good, rich soil, and they will grow and flower the greater part of summer. In the fall, they may be lifted, cut back, and potted, keeping them in the house partially dry until they again start into growth. I know several ladies who adopt this mode of culture year after year with remarkable success. If wanted as specimen plants for the decoration of the parlor during winter, they have to be kept in pots, out-of-doors, during summer, carefully attended to, and taken in before frosty weather in the fall. I have seen some beautiful windows, made by training the vines around the frames, others hanging in graceful festoons, thus forming fine surroundings for the other window plants.

Some of the finest species are, in a dry atmosphere, subject to attacks of red spiders; but seldom is this pest seen when the plants are kept outside during summer and properly watered at the roots. When trained

on the rafters of greenhouses, the red spider is especially apt to infest the plants, greatly marring their beauty. It gets on during summer by keeping them in the house, and unless thoroughly syringed on both wood and foliage, it is difficult to eradicate when once a foot-hold is gained.

Some of the best varieties for general culture are:

Passiflora alata.—The leaves of this species are large and glossy. The stem four-angled, flowers dark crimson, rays crimson, purple, and green; easily grown.

P. edulis.—Perhaps one of the commonest of the white and blue flowered kind; easily grown. The fruit is large, dark purple, and good for eating. It is a native of Brazil, and comparatively hardy.

P. cœrulea.—This one grows easily; purple flowers, leaves dark green, and will rapidly cover a large space during summer.

P. princeps.—The flowers of this fine species are bright scarlet, produced in long racemes. It makes a splendid specimen plant, especially when trained on a flat trellis.

M. Milton.

GROWING BULBS IN WATER.

In cities, the procuring of soil and pots for plant culture presents frequently a great obstacle to those who would gladly have their rooms bright and fragrant with flowers during the dreary winter days, if it could be easily accomplished. Whilst, when soil and pots are convenient, we do not advise the growing of bulbs in water, to persons not so situated this mode recommends itself by its simplicity, ease, and pretty effect. The accompanying illustrations show some of the many neat and pleasing forms of glasses used for this purpose.

After the glasses have been filled with rain or soft brook water up to the neck, the bulbs are placed on the top, so that their base just touches the water. They are then put in a dark and moderately warm place—a closet or cellar—for three or four weeks, or until the glasses are partly filled with roots, when they should be removed to the light, and gradually to full sunshine, where they will soon make rapid growth and develop their fragrant flowers.

HYACINTHS GROWING IN WATER.

A GOOD WINDOW BOX.

One of our correspondents gives the following directions for making a cheap and durable window box:

Take rough boards one inch thick and nail them firmly together in the shape desired; six inches high and wide is a good proportion. Nail molding on the corners and bottom and let the top piece project into the box one-fourth of an inch, and cover the outside spaces or panels with some pretty-patterned oil-cloth. Then mix three parts of builders' cement and one of sand together with water, and plaster the inside of the box upon the rough boards, flush with the molding. This will dry hard without a crack, if mixed properly, and will be water-tight for one and sometimes two seasons, and can easily be renewed, if necessary, after the box is empty in the spring.

GOOD AND BAD SEED.

In my early days of garden experience, our most reliable excuse for non-success was "bad seed." At the time I had most confidence in the above dogma, I was just leaving the ranks of the faithful who sow, year after year, greenhouse seeds in the open border, and facing toward the better results careful observation always gives. As opportunity has occurred for the past nineteen years I have subjected seeds to the damp flannel treatment, and my conclusions are as follows:

1. Much less worthless seed is sold than is generally imagined. I have found the larger proportion in packages sold on commission.

2. In nineteen cases out of twenty, germination is governed by conditions *after* planting.

The knowledge of these facts does not insure my invariable success, but does make me charge the failure to my own want of skill. Here, only last spring, I sowed Achimenes and Gloxinia side by side. The Gloxinia came up like Mustard, and I believe every seed in the package germinated, but only three or four of the Achimenes came up. Here was a case of bad seed at last; but, on comparing results with a lady who had a very small pinch from the package in question, I found that hers had come up remarkably well. I must try it again.

Wm. M. Bowron.

THE FUCHSIA.

A well-grown Fuchsia is one of the most graceful and handsome blooming plants in cultivation, and nothing can surpass the grace and beauty of a perfect specimen during its season of bloom. With the exception of some two or three varieties it is not a winter-blooming plant.

The Fuchsia is easily cultivated, succeeding best in a compost consisting of two-thirds turfy loam, one-third well-decayed manure, and to each bushel of this mixture add two pounds of bone dust. Mix the whole thoroughly, and use the compost rough, but pot the plants firm. Place the pots proportionate to the size of the plants, and see to it that they are well drained. Use porous or soft-baked pots by all means.

They do best when grown in a light situation, and in a temperature of from 55° to 60°. They love warmth and moisture, but cannot bear full exposure to the bright sunshine, hot soil, or dry air. The secret of obtaining good specimens is never to permit the plants to cease growing until they attain the desired size. Young plants obtained in the spring should be liberally cared for, and repotted as often as necessary until they reach the desired size, and if we wish to produce handsome specimens care must be taken about training them when young, pinching back the shoots as often as they show a tendency to grow out of shape, and supporting the main shoots by neat stakes. When growing, water freely and syringe gently every other evening, and when they commence to bloom give manure water twice a week, which produces large and well-colored flowers.

They may also be planted out early in May, in a deep, well-enriched border, in any situation where they can be sheltered from the hot midday sun. Thus grown, they should be well supplied with water at their roots, and gently syringed every other evening; they must also be supported with neat stakes. On the approach of cold weather they should be cut back, taken up and potted, using as small pots as possible; then they should be placed in a cold frame, or any other sheltered situation, until it is time to bring them inside. When first potted, water thoroughly, afterward sparingly.

The best way to winter Fuchsias is to place them in a dry, frost-proof cellar, or any cool, dry situation, where they can be kept in a partially dormant state until the first of April, when they should be started into growth by removing them to a warm, moist place. Water carefully until growth commences, when they should be turned out of their pots; have about one-half of the soil removed from their roots, and repotted in as small pots as possible; trim into shape, and treat as advised for young plants.

The winter-flowering varieties (*F. speciosa* and Earl of Beaconsfield) succeed best when planted out in the flower border, among the other greenhouse and border plants. Trim into shape when planting out, water if necessary, and take up and repot about the first of September. Give, if possible, a light, sunny situation, an average temperature of 55°, and plenty of water.

Propagation is effected by cuttings of the half-ripened wood, and if the young plants are liberally cared for, nice flowering plants will soon be obtained.

For the benefit of amateur cultivators I enumerate a dozen of the most desirable summer-blooming varieties:

Single varieties.—Aurora superba, Arabella (Improved), Rose of Castile, Rose of Denmark, Striped Banner, Wave of Life.

Double varieties.—Avalanche (Smith's), Avalanche (Henderson's), Deputé Berlet, Jules Mongee, Mad. Van der Strass, Snow Fairy.

For winter blooming add Earl of Beaconsfield and Speciosa.

Chas. Parnell.

Lawn and Landscape.

TREES FOR SHADE AND SHELTER.

At a meeting of the *Massachusetts Horticultural Society*, the subject for discussion was, "Planting Shade and Shelter Trees; the most desirable varieties and the soils best adapted thereto." It was opened with a paper by Leander Wetherell, who began by speaking of the importance of tree planting as affording shade from the burning sun, in a country remarkable like ours for the clearness of its atmosphere, and shelter from cold winds for gardens and orchards, as well as for homesteads and the contiguous grounds.

Trees for these purposes should be chosen with reference to their adaptation to the soil where they are to be planted; and also to beauty, that they may be decorative as well as useful. An Oak, Elm, or Maple tree, shading a modest dwelling with a grass plat before it, makes it more attractive than a showy mansion unprotected by a tree. The pilgrim and wayfarer welcome trees by the roadside, under whose umbrageous boughs they may pause and rest their weary limbs. Trees should therefore be planted by the roadside, and groups should also be provided in pastures, where cattle may find shelter from the heat of the sun.

The essayist said that one of the most distinct and pleasant recollections of his boyhood was that of four large trees near the house—a majestic White Oak, a stately Elm, and two shell-bark Hickories; and a little farther from the house, three large Chestnuts, which, as well as the Hickories, were quite notable for size and age. They were also good annual nut producers, the nuts from one of the Hickories being remarkable for size and quality; and the Chestnuts, Hickory nuts, Apples, and sweet cider did much to make cheerful the domestic rural life.

The influence of trees upon the healthfulness of the atmosphere was next considered. They not only, like other plants, imbibe carbonic acid, but air charged with moisture is deprived of it by trees. Localities in Italy have been preserved from fever by screens of trees, and it is generally conceded that forest screens are protections against noxious exhalations from marshes when located at the windward of them. The swamps of the Southern States were not unhealthy, even to white men, so long as the forest remained. Let all, therefore, who own land enough to plant a shrub or tree fail not to plant one before another season, if they have not already done so. What shall it be?

THE OAK.

This inquiry led to the consideration of the selection of trees for planting, and the first named by the essayist was the Oak, which has been called the King of the Forest. The essayist spoke at some length of the historical and poetic associations of the Oak, and mentioned several trees renowned for their size, age, and associations, —mostly in England,—but concluding with the celebrated Charter Oak at Hartford, Conn., and the Wadsworth Oak at Geneseo, N. Y., near the Genesee River, in one of the most fertile valleys of the Middle States. The trunk measured thirty-six feet in circumference, and the tree attracted large numbers of travelers journeying to Niagara Falls and the West. The essayist had never seen so remarkable a specimen of the Oak or any other indigenous tree east of the Mississippi River.

The Oak is acknowledged to be the most picturesque of trees, and as a shade tree cannot be excelled. The favorite species with the essayist is the White Oak (*Quercus alba*), of which Mr. Emerson said that it is beautiful in every stage of growth, and concluded his description of it with these words: "Let every one who has opportunity plant a White Oak." He measured one in Bolton that was nineteen feet in circumference just above the surface of the ground, and one in Greenfield that was seventeen and a half feet. The one referred to as near the homestead of the essayist was about fifteen feet in circumference near the surface of the ground. The soil best suited to the Oak is a strong, tenacious loam.

THE ELM.

The next tree named by the essayist was the Elm (*Ulmus Americana*), which is or was formerly a great favorite in New England, and especially in Massachusetts and Connecticut, where there are still many trees of great size, beauty, and grandeur. Some of the most magnificent specimens are found in the valley of the Connecticut River, in both States. It thrives best in rich, moist ground, such as is found along the banks of large rivers, between 42° and 45° of north latitude. The sturdy trunks and graceful boughs are unequaled, and it is among the early bloomers in spring. It is more easily transplanted than the Oak, as it roots nearer the surface of the ground.

THE MAPLE.

The Sugar Maple (*Acer saccharinum*), like the Elm, has long been a favorite shade tree in Massachusetts. It is the most notable tree of the Maple family. Its foliage is dark and beautiful, and free from insect or parasites, which cannot be said of the Elm. It is indigenously less common in eastern than in middle and Western Massachusetts. In Blandford a Rock Maple is mentioned by Mr. Emerson that was four feet through near the surface and one hundred and eight feet high, and when cut up produced seven and a half cords of wood. In Amherst, Belchertown, Stockbridge, Deerfield, and Sunderland are planted double rows of Rock Maples, which are magnificent decorations of the highways. The Sugar Maple is indigenous to sweet, rich, mountain soil.

Other trees named by the essayist were the Linden, a beautiful tree, the Beech, Horse Chestnut, Birches, Ash, Locust, Acacia, Chestnut, Mulberry, Ash-leaved Maple, Hickory, Black-walnut, Mountain Ash, Catalpa, Magnolia, Tulip-tree, Gingko, Larch, etc., some of which, he said, are more curious than desirable.

EVERGREENS.

The Evergreens must not be overlooked; among them the Cedars, Arbor Vitæ, American Holly, Yew, Juniper, White Pine, Silver Fir, and the black, white, Hemlock and Norway Spruces were named. They are planted as ornamental rather than as shade trees, and are best adapted for shelter screens or wind-breaks. For the last named purpose the essayist did not hesitate to name the white Pine-tree as best. A white Pine-tree in Hingham was said, on the authority of the late Rev. J. L. Russell, professor of botany to the society, to have measured, at thirty-two years of age, seven feet in circumference and sixty-two and a half feet in height. The Pitch Pine, Scotch Pine, Norway Pine, and Norway Spruce, Hemlock, black or double Spruce, white Spruce, American Arbor Vitæ and Larch—the last a coniferous tree and a rapid grower, though not an Evergreen—should be included among trees for wind-breaks.

RAISING TREES FROM CUTTINGS.

A few varieties of forest trees, notably the Poplars and Willows, are very easily grown from cuttings of the wood, and are commonly propagated in this way. The new wood is used for this purpose,—that is, the wood of the previous season's growth. It should be cut in November or December, before any extreme cold weather occurs, and during mild weather when there is no frost in the wood.

Keep fresh by putting it away in sand, in the cellar, and work up into cuttings during stormy weather in the winter. They are made by simply cutting the wood with a sharp knife, into sections of about eight inches in length; then pack them away in sand or earth, in shallow boxes, so that the upper ends will be exposed to the air. Keep in this way until spring when the callus forms on the lower end, and they will start more quickly into growth than if cut in spring, just before setting them in the ground.

In planting them out, it is important that the lower ends should have the earth packed tightly against them, and to do this successfully it is necessary, if planting them in the nursery, to open a trench by stake and line, or, if in the forest, to throw out a spadeful of earth at each place where the cuttings are to be inserted. They should be set deep enough so as to cover up the terminal bud.

Forest Leaves.

PROTECTING YOUNG EVERGREENS.

All newly planted Evergreen trees are benefited by winter protection of their roots, sufficient to prevent the frost from reaching to their lower extremities. With tender and half-hardy kinds this becomes of still more importance. It is frequently observed that in localities where large specimens of certain species withstand the severest cold, newly planted trees of the same kinds are killed the first winter. In most cases this is owing to the fact that the roots of the older trees have penetrated below the frost-line; and our young trees, if we would have them live, must have the same conditions provided for them by artificial means—that is, receive sufficient mulching to prevent frost from reaching their lower roots.

With the more tender kinds, the tops should also be protected by loosely tying some coarse Evergreen branches or loose matting around them.

Foreign Gardening.

A GARDEN IN PARA.

(Continued from last number.)

"What can you do with so many Oranges, Senhor?" we ask.

"Nothing," is the reply; "they give me great trouble by falling off and injuring the plants. I have five kinds in hundreds of bushels, and it would cost me more to gather them and to send them to market than they would bring; I willingly give them to any one who will gather them carefully."

The border on our right is full of Caladiums, of which Senhor Olinda has about fifty varieties, but at this season they are mostly at rest, and only the carpet of *Tradescantia zebrina* appears. From December to June the effect of the Caladiums, many with white foliage, above the dark mass of the Tradescantia is very striking. On the left is a long border planted with dwarf Bananas, *Hibiscus Indicus* in many varieties, *Dracænas, Crinum Josephine*, which grows to an immense size and gives stalks of bloom so heavy that one would not wish to carry one away, *Alpinia vittata*, which is very richly marked, and a few Fig-trees in the background. In front, along the path, are great tubs with some of the newer Hibiscus, white, rose, scarlet, orange and yellow, double and single, some tall-growing Orchids, Crotons, among which *Moorcanum, rosco-pictum, Stewartii, Andreanum*, and *maculatum Katoui* are especially fine, and tall plants of *Aralia filicifolia* and *Guilfoylei*, the variegation of which last is superb.

Passing onward, we come to a wicket-gate opening into the quintal, or orchard. Long rows of Orange, Alligator Pear (*Persea gratissima*), Sapodilla, or Custard Apple (*Achras (Lucuma) Sapote*), Abio (*Achras Caminto*), Guava, and other fruit trees, extend before us, and on every side are low tables of plants. All the trees and the fences hang thick with Orchids, and the variety of foliage and profusion of flowers are wonderful.

The quintal is fenced on each side by a heavy palisade some ten feet in height, so that the surroundings are wholly shut out and the tables and trees are mostly in parallel lines, so one seems to be in an immense greenhouse with long aisles of brilliant plants. Close to the wicket, climbing up an Orange-tree, is a grand plant of *Monstera deliciosa*, the curiously cut leaves of which are as large as an umbrella. Tables close by hold one plant each of different species of Crotons, of which Senhor Olinda has about fifty. These plants, though by no means as large as many which stand around in great tubs, are each a specimen; all are so fine and yet so different, that it would be difficult to choose between them. A large round table is filled with white-leaved Begonias, *Pteris tricolor*, and Marantas, and another near, with Achimenes in about forty varieties, all masses of bloom. By planting in succession, Senhor Olinda has these in bloom every month in the year; they grow vigorously and flower freely.

Passing on, we come to a fine plant of *Roupelia grata*, which, disdaining the trellis provided for it, has mounted into a tree, and is just opening its shell-tinted, waxy flowers. *Meyenia erecta*, both white and blue, forms large bushes, which are covered with bloom every day in the year.

A great plant of *Croton microphyllum* seems to hold the sunlight, and an immense *Anthurium crystallinum* shows great leaves veined with frost-work.

Some of the Alocasias are very fine, especially *Veitchii*, with leaves two feet long; *Sedeni* and *metallica*, bearing large, lustrous bronze leaves; and *zebrina*, with zebra-variegated petioles.

Dracæna Goldiana and *Sansievera Zeylanica* and *Guiensis*, all of the same general shading, are very effective.

Some Ixoras, especially *salicifolia* and *Williamsii*, were in brilliant flower, and many Ferns and Lycopodia on the ground under the tables are very attractive.

At the bottom of the quintal an unexpected sight awaited us. We had seen so much to admire that we thought we had seen the best, but the tables of Tydæas and other gesneraceous plants were, perhaps, more brilliant than anything in the garden. These tables are all covered with corrugated, galvanized iron roofing, supported on high posts so as to allow plenty of air, but yet protect the plants from the heavy rain and the fiercest sun. The iron plates, slightly inclined to shed the rain, are simply laid on horizontal strips of board which stretch between the posts. Violent winds are unknown in Para, and there is no danger of a tornado whirling them through the air to the damage of everything near; they can at any time be removed in a few moments. Some of the Tydæas were four feet tall and two feet in diameter, and masses of bloom. Senhor Olinda has all Van Houtte's best varieties, and the display is very fine. They are grown in very bread pans in vegetable mold, silver sand, and well-rotted manure, and, what is one secret of successful growth, they are never allowed to become dry. The only enemy they have is a small black bee, which bites the tube of the opening flower to get the honey, and thus causes it to fade quickly. Under a broad-roofed shed, close by, were many choice Marantas, Ferns, and other shade-loving plants, while on tables exposed to the hottest sun were Tillandsias and other Bromeliads.

Surely one's whole time must be occupied with the care of such a collection, in all some ten thousand plants! In another climate several gardeners would be needed for such a service; but in Para it is different. Senhor Olinda is obliged to be at his office in the city every day from nine to four o'clock, and no one but himself ever touches or waters a plant. The labor of potting and propagating, to one who understands it, is comparatively light, and the daily afternoon shower does most of the watering.

The Senhor told us that from December to August he had only twice been obliged to give a heavy general watering, but every plant is looked over morning and night. The labor of watering is greatest in October and November; but by a systematic grouping of the plants, it is reduced to a minimum, and all is accomplished in two hours, morning and night. To us it seemed the perfection of gardening—the maximum of pleasure and the minimum of labor; and as we turned our steps cityward, we thought that Para, with its perfect climate, is a Paradise for a lover of flowers.

E. S. Rand.

A HOUSE OF FLOWERS.

Roses and Lilies were wreathing the interior of an ideal London residence. In the entrance hall of this fine house, says a correspondent of the *London Globe*, the fire-place was hidden in pink Geraniums and grasses. The two fire-places in the dining-hall were respectively dressed, the one with Sunflowers and blue-ball Thistle on the chimney-piece, mixed with variegated Ferns and foliage and pink Roses at the base, the other with scarlet Gladioluses and white Hydrangeas; against the deep terra cotta of the walls they showed up splendidly. As one ascended the stairs, three huge balls of Roses, each about three feet in diameter, were hung by long pink ribbons, twined with a creeping plant from the balustrade at intervals; the lowest the darkest, the next a medium, and the top the lightest shade of pink. The large drawing-room had two alcoves. Opposite its entrance was a large mirror framed with Palms that rose out of a bank of pink Lilies, pink Heaths and Roses, interspersed with lovely leaves.

But the other alcove, the wonder of the whole affair, was literally a bower of Roses. Wire netting, covered close with these sweet blossoms and leaves, lined the interior, with the exception of a mirror. It was quite fairy-like. The chimney-piece and fire-place were arranged wholly with pink Gloxinias and variegated foliage, a delicate Cocoa Palm at each end serving as a frame.

The back drawing-room mantel-shelf was similarly arranged with pink Carnations, and that of the boudoir beyond was embowered in magnificent Lilies, Oleanders, pink Geraniums, and the lower part in glorious Roses with most exquisite greenery. The curtains throughout the rooms were all looped back by bands of Roses; in fact, it was a perfect "nocturne in pink," and culminated in the beautiful dress of the hostess, who wore a rich brocaded white satin, trimmed with Roses and priceless lace, set off by a superb set of large, pear-shaped Russian emeralds hung from *rivieres* of diamonds.

A ROYAL FLOWER MISSION.

The Queen of Holland is the leading spirit of an enterprise which is well worthy of commendation and imitation. It is a society for the purpose of encouraging floriculture and horticulture among children, invalids, and aged people. Every year grain and flower seeds are distributed among these classes, and at the end of the season prizes are awarded to those who have taken the most interest in their work, or have been the most successful. The members of such a society deserve to be known as philanthropists, for they benefit the world just as surely as the founders of insane asylums or charitable institutions.—*Prairie Farmer.*

ASPARAGUS IN POTS.

At the recent exhibition in Turin, Italy, a number of Asparagus forced in pots attracted considerable attention. The pots were comparatively small, and many contained each some twenty sprouts; in fact, they were crowded with them. With sufficient quantities of liquid manure, it would seem not more difficult to raise Asparagus in pots than fruit trees.

Rural Life.

SUBURBAN HOMES.

We have been particularly impressed with this subject the past few days, says Edgar Sanders, in the *Prairie Farmer*. It is interesting to note the difference there is, from a variety of causes, between what one man will do with a fifty-foot lot and what another will not do. To our thinking, for most village people in moderate circumstances, a fifty-foot lot by about one hundred and fifty feet deep will give all the room necessary to make a cozy, home-like place, and about all that most persons of the class we are thinking of can keep in good shape. This can be done with little or no expense, with a few hours' work each week, if rightly managed.

That locality is best where some attention has already been, or is likely to be, paid to a few of the preliminary necessaries. For example, a building-line of not less than thirty or forty feet back from the fence is highly desirable, and it will be best if all the residents of the street conform to this, and also that lots all have a fifty-foot front. This gives space enough for the grass and the flower garden in front of the house, and at the sides to afford full light from all quarters.

For the front there is nothing more pleasing than close-shaven grass. Let there be a walk, not less than four feet wide,—and on no account other than straight,—from the fence to the steps. Another walk may reach from this, on one side or both sides of the house, to the back door. These are all the walks this part will require, except where the alleys are defective. In this case one not less than ten feet wide will be wanted so as to permit of keeping a horse or for hauling wood, coal, etc.

There is no necessity for exactly imitating one's neighbor in the management of this front; in fact, there are many reasons why, if each differs from the other, the most pleasing results to the general appearance of the street will follow. Some will prefer having little, if anything, but a close-shaven lawn, and if this be kept in perfect condition it is always a pleasure to look upon.

Another front which we have in our mind's eye is noted for its flower beds, one flanking each side of the walk, of irregular shape; another, toward the widest part, has two rustic vases in the center. There is also a rustic basket, nicely filled on each of the posts at the bottom of the steps; another is fastened on the rail at each opening between the posts of the piazza. There are climbing Roses at various points, but no shrubs in sight, save a bush of the charming Sweet-brier. This front really has a marked floral effect. Not every one would feel like spending twenty-five or fifty dollars every year to get this display. Still, if but one in a street does, it is a help.

Another resident combines profit with pleasure. He has several fine clumps of shrubs. The dividing-line on one side is a Lilac hedge; there are four Early Richmond Cherry-trees, which this year had not less than a bushel and a half of Cherries to the tree, and every year had sufficient for family use. Several quarts of Gooseberries were picked and preserved, and more than a bushel of Currants. The flower garden is more limited,—only two beds,—the plants doing duty in the garden in summer and in the house in winter. A horse is kept at this place, and a little fancy poultry, the latter, of course, in a confined space. Then we know others who use all the back space as a vegetable garden, and claim that the fresh, crisp Lettuce, Radishes, Cucumbers, etc., are ample recompense for the little morning toil necessary to secure them.

We were this morning on one of these fifty-foot lots, in a more humble quarter, where the house is yet but a small cottage, planned for an addition when the ground is paid for, and found it a veritable kitchen garden. It contains Potatoes, Parsnips, Beets, Peas, Onions, Carrots, Cabbages, Tomatoes, Lettuce, Radishes, and even herbs of several sorts. This is the second summer it has been cultivated, and of course the sod of last year is now in excellent condition for growing good crops. The result is marvelous. The lot will furnish more of the freshest and best of vegetables than the family—man, wife, and five children—can consume during the summer. To show that utility is not altogether master, the straight walks are bordered on each side with flowers of the commoner kinds. Here, however, the lawn is dispensed with. The click of the croquet mallet, in some cases, tells that the back yard is converted into a play-ground.

As we remarked above, it is not desirable to aim at uniformity; indeed, with this the charm would be broken. Let the grounds, like the house, be varied to suit the owner's taste and purse. One will choose a cottage costing, it may be, only from one to three thousand dollars. Another, more pretentious, will now and then run up considerably into the thousands. But let there be neatness in everything, and by no means forget the public street in the front of the place. We are forced to admit that it is too common to see fairly kept inside grounds, with street-front entirely neglected. However well a lot may be kept, much of the beauty is lost to the passer-by if his eye rests on a part utterly out of harmony with that over the fence.

PIAZZAS AND PORCHES.

"A country house without a porch is like a man without an eyebrow: it gives expression, and expression where you want it most. The least office of a porch is that of affording protection against the rain-beat and the sun-beat. It is an interpreter of character; it humanizes bald walls and windows; it emphasizes architectural tone; it gives hint of hospitality; it is a hand stretched out (figuratively and lumberingly often) from the world within to the world without."

Thus saith the wise author of *Out of Town Places*. Similarly, a country house without a piazza—applying that term to any sheltered adjunct to the main walls of a house, not primarily intended to shelter or embellish the entrance door—may be likened unto a man without ears; it lacks breadth, the readiness and completeness of full equipment for all exigencies. To change the figure, it is like a man of selfish, reserved, ungracious disposition, who cares for nobody, trusts nobody, invites nobody to share his joys and sorrows. Clearly, then, a house ought to have a piazza somewhere. But it sometimes happens—in fact, it usually happens—that a broad side piazza, or a full-sized extension of the "front porch," will keep the light and sunshine from rooms inside the house which cannot afford to be deprived of these inalienable rights.

But "one corner" does in many cases suggest a circular piazza which, although having breadth and comeliness, still carefully respects the rights of the interior—by no means an invariable characteristic of the outside trimmings of men or houses.

The little sheltered inclosure is a different affair, evidently holding itself to be the head and front of the corner it occupies, although so modest in appearance. It is justifiable in our variable climate, as affording a middle ground between indoors and out, and should never be allowed to stand before the southern windows, though it may fill an unoccupied angle or rest against a blank space between windows widely separated.—*The Builder.*

THE COUNTRY-HOUSE HALL.

"It is to be hoped," says Ella R. Church, in *Godey's Lady's Book*, "that the entrance door of our country house has a wide, hospitable look; for this is a grace of expression that seems especially to pertain to a rural residence. We will therefore assume that it has; and trust to be ushered into a hall of corresponding dimensions, where the staircase does not thrust itself obtrusively forward, but retires modestly into the background. When it is too far front, and especially if there is no vestibule, a tall screen of simple construction will shut it partially off.

"Shade without gloom, and a certain quaintness of character, are attractive in the country hall, which is too often a bare, glaring passage-way from one part of the house to another. The cutting off of angles is always an improvement; and some one recommends that the corners behind the front door be converted into bracket cupboards, as it can be done without much trouble or expense.

"A panel of wood is fitted across the corner, of a size proportioned to the width of the hall; it is rounded at the top, and an arched opening is sawn from the center. Over the arch a triangular shelf may support a bust or vase; while a similar one at the bottom will accommodate an umbrella-stand.

"A stained or painted floor, with a rug or a width of crimson carpet on the center, looks well in a country hall, and a table of some kind never seems out of place, whether on one side or in a corner. The hat-rack may be of simple construction, pine wood ebonized, and can be made by a village carpenter.

"An inexpensive bracket, placed rather high on the wall, at the foot of the stairs, to hold a receptacle for flowers, is a charming bit of ornament, and we know of one supporting a large white shell, from which a long sweeping fringe of *Tradescantia* droops in perennial greenness, for it has taken root there, and is always ready to furnish a back and foreground for the flowers which find their way there in greater or lesser profusion, according to the season. Sometimes there is little or nothing besides the green sprays; but they are always beautiful, and seem doubly so when found in an unexpected place."

Exhibitions & Societies.

NEW-YORK HORTICULTURAL SOCIETY.

The October exhibition of this society was held at Horticultural Hall on the 7th ult. Several rare and valuable plants shown here for the first time made the occasion of more than usual interest.

Mr. J. H. Cockraft exhibited a rare and exquisitely beautiful Orchid under the name of *Cattleya aurea*, the correctness of which was doubted, however, by several specialists who pronounced it *C. Dowiana*. The color of its flowers is very different from all other species of the genus. The petals and sepals are of a peculiar yellowish-buff, while the lip is very deep amaranth-purple, velvety, appearing almost black when seen from some distance, and distinctly and sharply veined with golden yellow. The flowers were fully six inches in diameter and presented a really gorgeous sight.

A *Dracæna Lindenii* exhibited by W. C. Wilson attracted deserved attention. The bright green leaves are broadly striped with light yellow, in marked contrast to the red-leaved species.

The collection of foliage plants exhibited by Siebrecht & Wadley was one of the leading and most attractive features. All the specimens were well grown and in healthy condition. Most notable among them were: *Anthurium Andreanum*, *Curcuma Roscoiana*, *Schismatoglossis Roblenii*, *Sphærogyne latifolia*, *Dracæna Bausei*, *amabilis*, *Goldieana terminalis*, *Adiantum decorum*, *Farleyense* and *formosum*, *Alocasia macrorrhiza*.

The largest exhibitors, as usual, were Hallock & Thorpe, filling about half of the table room in the hall. Their collection of single and double Dahlias, Gladiolus, Geraniums, Zinnias, and cut flowers deserved all the premiums that were showered upon them.

Several collections of Roses, Orchids, and other flowers and plants from various exhibitors we regret not to have had sufficient time to notice specially.

Prominent upon the Fruit table were several plants of the new white Grape, Jessica, exhibited by J. T. Lovett; some very promising seedlings raised by F. Roeubeck; also seedlings from Chas. C. Copley, and some magnificent bunches of hot-house Grapes raised by Mr. J. M. Kellar.

Mr. Geo. Mathews made a creditable display of vegetables, comprising all the seasonable kinds to be found in a well-appointed garden.

The special Chrysanthemum exhibition, on account of the first Tuesday of the month being election day, will be held on Wednesday the 5th of November.

THE AMERICAN INSTITUTE.

Two special exhibitions of Plants, Flowers, and Fruits were held during the past month at the Hall of Industry, Third Avenue, Sixty-third and Sixty-fourth streets. The first opened on the 8th of October, continuing for four days, and attracting thousands of visitors. Several hundred entries were made, and in several classes competition was so close as to make the judges' task an arduous one. The most notable features were the general excellence of the exhibits and the tasteful manner in which everything was arranged, giving the whole a most attractive and imposing appearance.

Among the principal exhibitors in the Plant department we noticed Hallock & Thorpe, W. C. Wilson, John Finn, James Buchanan, S. R. Shaw, and J. G. Beehamps & Son. W. C. Wilson's collection of hot-house plants comprised many valuable Palms, Crotons, Musas, Yuccas, Marantas, Anthuriums, etc., all in well-grown specimens. The large collection of Palms shown by John Finn attracted probably as marked attention as any exhibit in the hall. His specimen *Phœnix dactilifera*, *Latania Borbonica*, and *Pandanus utilis*, with leaves spreading over five feet, were of remarkable beauty, and presented a grand sight. Hallock & Thorpe's collections of various plants covered an entire table running through one-half of the large hall; it was laden with many hundreds of rare and beautiful plants, and was constantly surrounded by an admiring crowd. A collection of twenty species of Selaginellas, the name of the exhibitor of which we could not learn, was highly interesting and meritorious.

In the Fruit department, Ellwanger & Barry, of Rochester, were deservedly awarded all the first prizes for best collections. They exhibited a collection of 112 varieties of Apples and 73 varieties of Pears, in addition to innumerable single plates, which to name would fill more than a page. T. S. Force, of Newburg, showed, if not quite as large a number of varieties, remarkably fine and well-grown specimens. Daniel Van Alst, F. B. Kelly, and Wm. Ottman made also creditable exhibits.

E. and J. C. Williams, of Montclair, N. J., led the van in the Grape division, taking the first prizes for the best collection of ten, as well as that of five varieties, and also a large number for single plates. The new white Grape "Niagara," exhibited by this firm, attracted a great deal of attention; the heavy, full bunches measuring seven inches and more in length, and tastefully suspended from a small trellis, looked provokingly tempting.

C. C. Crosby, T. S. Force, C. J. Copley, A. J. Field, and others showed also fine bunches of various varieties. The only exhibit of foreign Grapes were two glorious bunches of Barbarossa, weighing together ten pounds, from Arthur Rich.

The Vegetable table presented a few collections of Potatoes, and the leading vegetables of the season.

A special Geranium show was held from the 15th to the 17th. Messrs. Hallock & Thorpe were, of course, the principal exhibitors, and were awarded most of the prizes. The efforts made by this firm, and the risk incurred in bringing so extensive a collection of valuable plants from so great a distance at this season, deserve high commendation, and probably few of those who enjoyed the sight of their magnificent exhibit can form an idea of the amount of labor and money expended in its production. John Farrel, gardener to William Barr, exhibited also a large collection of single plants, many of them of merit.

The Chrysanthemum show, announced to be held on October 29th has, on account of the lateness of the season, been postponed till November 12th.

Household Pets.

PETS AND CHILDREN.

The care of pets has a beneficial influence upon the health and character of children. In attending to them the time which most probably would be spent in idleness, or worse still, among bad associates, is occupied in healthful and instructive amusement. Children always learn about the habits, peculiarities, etc., of the animals which they keep as pets. And a very dull boy it is, who, having rabbits, will not eagerly read and remember everything he can find concerning them. "From little beginnings great ends are produced," and the love for nature's beauties has often sprung from the keeping of pets. Many great naturalists will say this.

I admit it is very inconvenient to have one's house filled with old bird-cages, squirrel and white mice boxes; the yard covered with rabbit hutches or bantam runs; the garret turned into a pigeon loft, or the choicest spot in the lawn occupied by a fish-pond. But we must remember our children's characters are now forming, and that it rests with us, in a good measure, whether they shall contract habits beneficial or injurious. We must keep in mind the fact that, habits formed in youth, good or bad, will cling to them throughout their future lives; and if we prevent our children from forming evil associates we do a good for them for which they will bless us in future years. And when your son rushes into the room with a rabbit under each arm, and a pair of white mice in each pocket, with eyes beaming with pride and love, and cheeks made rosy by exercise, and lays his pets before us for our approval, instead of greeting him with a cold glance and the pets with a look of disgust, pour words of encouragement into his ears, and kindly pat the little creatures, thanking God that it is not the wine bottle or the card pack with which he is so infatuated.

One bad habit in particular, incident to childhood, the care of pets will overcome; a habit which will have to be shaken off before they can enter on the stern duties of business life. I mean late rising, which, if allowed to get a firm hold, would deprive them of one-fourth of their wordly lives. If upon a son this habit has once fixed itself, buy a pair of rabbits, construct a hutch for them, and tell your boy if he will rise every morning at five o'clock and feed the rabbits they are his; if not, you know a boy who would be glad to do so. Most likely he will joyfully accede to your request. By degrees the habit of late rising will be conquered, and a new one grafted in its stead, worth to him many hundred pairs of rabbits.

Upon the health of sickly or delicate children the habit of early rising and caring for pets has a most salutary influence, and instilling in their minds many ideas of much moral worth.

The care for some living creature dependent upon a child for its wants, tends to develop some of the noblest traits of character.

Before allowing children to keep pets of any sort, it is better to exact from them a promise that they will be punctual in attending to the wants of the little animals placed so entirely in dependence on them for food and attention.—*Feathered World.*

Miscellaneous.

INDIAN SUMMER.

The roadside bright with wealth of bloom,
The soft air sweet with faint perfume,
The birds in ecstasy of tune;
"Ah! this is June, most perfect June,"
We cried, and plucked the flowers gay.
"O perfect June! O perfect day!"

The pathway led thro' forests deep
Where winds unceasing dirges sweep;
The Maples fired the gloom with blaze
And led us into untracked ways;
"Ah, this October is," we cried,
"October in full pomp and pride!"

The pathway wound a mountain steep
Where Gorse and Heather grew knee-deep;
The summit reached, a chill wind blow,
Cold seemed the overarching blue:
"November 'tis again, we cried;
"Farewell to thee, sweet summer-tide!"

Descending into valleys green
Where cattle browsed, meek-eyed, serene,
Where babbling sped the noisy brook,
And eager fishers baited hook:
"'Tis Summer still!" once more cried we,
"O Indian summer, hail to thee!"

M. A. S., in Boston Journal.

FLORAL DECORATIONS AT HOME.

THE HALL.

It is never good taste to place in the corridor any but foliage plants, or cut Ferns, vines, evergreens, and the like. Flowers, whether on or off the bush, are more or less susceptible to draughts, which blight their petals and mar their perfection. It is inconsiderate and inharmonious to garland banisters with Roses, or place bouquets of rich blossoms on newel posts.

Let the former be bound with chains of shaded Ferns, and a specimen *Croton elegantissimus* surmount the latter. A corridor can be made fantastically bewitching with lacy Ferns and brilliant foliage. It may be dressed to represent a Fern lane for festival occasions, or rendered quietly beautiful with a few plants, or bunches of cut vines and foliage. A peaceful aspect is bestowed by verdant foliage, which is most refreshing, delightful, and suitable for the entrance to a house.

A charming bouquet for the hat-stand is one of Dogwood Ferns, *Adiantum tetraphyllum gracile*, which has a reddish cast to its young fronds, Elkhorn Ferns, and *Selaginellas*. If these are laid in a flat dish of water they will remain fresh many days. The dish will look more artistic if fringed with trailers. Smilax and *Lygodium scandens* will last some time, but Tradescantia will grow thriftily in water. A simple flat basket planted with Lycopodium is very attractive in this position. All kinds of mosses and wood growth will ornament hall-stands; a bunch of autumn leaves is also very suitable and handsome.

THE DRAWING-ROOM.

All flowers become the drawing-room; the finer and the more choicely selected the varieties, the more elegant the decoration. Roses are the richest and dressiest of all blossoms; Orchids are exceptionally choice, and Lilies are the most effective. The tendency in parlor decorations is to overdo, and to fill in positions high with coarse and inferior bloom.

The fashion of swinging nondescript designs between doors and over mirrors is born of poor taste. Flowers lose their effect when tied on sticks and woven into silly mottoed balls, knots, and arrows. Small flower glasses should contain but one long-stemmed Rose, a spike of Orchid, or a few Lilies.

Vases demand careful arrangement. Callas and *Euphorbia Japonica* combine well in these, but Callas are more effective with their own foliage simply, and should never, in our opinion, be in company with blossoms, unless related to their family. The same is applicable to *Lilium longiflorum*, *L. candidum*, or the gorgeous throated Amaryllis, which are maltreated when placed among a conglomeration of flowers. To see any flower in its entire beauty, its foliage must remain undisturbed.

The habit of snipping the leaves from stems and binding them close about the blossom is ridiculous, as the stem with its growth shares the glory with the flower. For this reason "cluster baskets," the thickly massed bouquet, any arrangement, in fact, of flowers where their foliage is stripped and they are tied to a stick is inartistic, and is usually a make-shift to utilize inferior blossoms. Limoges vases, decorated with floral devices, are handsome holders for Roses.

THE FIRE-PLACE.

As the fire-place is the center of attraction in any room, so the mantel above it is the place where the most artistic effects in floral decoration can be produced. When there is no fire fill the fire-place with pots of blooming plants. These may be sunk in baskets of moss with excellent appearance. Double Geraniums are beautiful for this purpose, especially when the trusses of bloom are at their maximum. A few Ferns should be intermixed.

To bank mantel-pieces seems an intricate piece of work, but it is not. The prettiest plan is to bed the mantel-piece with Lycopodium; it makes a cheaper and more effective foundation than massed blossoms. Lay first over the mantel-piece a coat of tin-foil. Cut strings of Smilax into a fringing to fall over the edge, and trim it evenly. Place this on the tin-foil; turn out the Lycopodium and put the contents of each pot firmly together until there is an even bed of it. Bend it down to fit the edge from which the Smilax fringing hangs. Vases of flowers may be set on this, or flat baskets filled loosely with Roses and spring flowers. Upon such a foundation most any effect may be brought out.

FLORA.

FLOWER CULTURE IN BOSTON.

Strangers in Boston during the summer season over remark the loveliness of the Public Garden, an addition, yet quite distinct from the Common. It is a huge lawn, some twenty acres in extent, dotted with patches of bright-colored flowers, a single kind in a bed of oblong, round, square, or some eccentric shape. The effect of such coloring in the midst of a smooth, velvety lawn is very charming, from the contrast as well as the beauty of the blossoms. The whole atmosphere is pervaded with those sweets. A lake, an ornamental bridge, shrubbery, and great shade trees at intervals along the winding pathways, make this spot an elysium.

As the season advances the flowers are changed, and so the place is ever harmonious in its beauty and purpose. All through the year flowers are hawked in the business streets of Boston at every hour of the day and evening. Great Roses, and Pansies, and Clove Pinks seem to take the lead in this street trade; while the florists' windows have an embarrassment of riches in the rarest and most costly flowers from their great conservatories.

In no city are flowers and foliage plants more extensively used for decorative purposes. The bordering of a table-cloth made of Roses for a dinner-party is not uncommon, or the ornamentation of the wall of a dining-room or a parlor with the choicest cuttings from a greenhouse. A pretty fashion in calling is the leaving of a bouquet with a visiting-card.

The Roses cultivated near Boston have long been accepted as the finest grown in this country. About five hundred are sent to New-York daily, and as many more in other directions. One florist grows nothing but Clove Pinks in his largest conservatories. Another cut ten thousand Violets in one day in a single greenhouse. The most famous Rose houses in the vicinity are those of Natick, belonging to Mr. Wood, some twenty-two in number, each over one hundred feet in length by thirty-two in width, and all so connected with underground passages that the workmen can pass from one to another without going outdoors. The Roses are trained on wires and are exceedingly vigorous. The buds are cut every hour and carried to an ice-house lined with zinc, and having three air-chambers, until packed in air-tight boxes for the home market, or to be sent to New-York, Philadelphia, St. Louis, Chicago, Canada, and as far as Kansas City. In February there were seven thousand Marechal Neil Roses cut in one of these houses, and twenty thousand Jacqueminots in another, to say nothing of the thousands of Cornelia Cooks, Baroness Rothschilds, Catherine Mermets, and all the varieties of Roses that are so eagerly sought for at the present time. One house has Tea Roses alone. These Rose houses cover four acres, and require an army of workmen to take care of them.

The very height of floral culture of all varieties in the neighborhood of Boston is, however, reached in the famous "Hunnewell Gardens," or the "Italian Gardens," as they are popularly called. They are open to all who care to visit them. There are fifty acres under cultivation. One portion of the grounds runs down to a pretty lake called "Waban Mere," which is the fountain-head of the Charles River. The terraces are here ornamented with evergreens cut into fantastic shapes, that give an almost weird appearance to the place. Farther up the bank, on the lawn, are walled inclosures of evergreens, with winding paths in the short turf or beds of flowers. Arched openings give egress from those romantic and lovely rooms. One of them is so arranged that an awning can be drawn over it for social purposes, or the display of some rare show of flowers.

The conservatories, fruit and Grape houses are marvels of their kind. In one house are one thousand rare Orchids, from every country where Orchids grow, and they hang in

fantastic grouping from the glass roof, the side of a board, or some other unexpected situation. Figs, Nectarines, Grapes, and Peaches tempt one to pluck them while *en route* through this tour of the glass houses. The foliage plants are a wonder, as well as the Azaleas, of which there are many varieties.

The house conservatory is admirable for its arrangement. It is a room high and wide, and paved with marble, and having a plate-glass front toward the home mansion. Here the choicest of the blossoming exotics, the Roses, in short, everything that is best from the greenhouses, is arranged to delight the eye of the owners of the estate, from time to time, as they come to perfection. It is difficult to imagine anything finer of this description. In June the Azaleas are placed on the lawn under a canvas cover, and later the Rhododendrons in the same fashion, to the admiration of all who go to see them.

As these gardens are contiguous to Wellesley College, the students of that institution have the rare privilege of rowing across the "Mere," and enjoying the sight of this culture of flowers.

The famous Baker gardens, near the Hunnewell estate, are not so extensive, but have unique features. In Cambridge are some gardens of rare beauty, and a public botanical garden of considerable excellence. The flowers and plants from this last-named garden and its conservatories are used by the classes in botany of both the Harvard University and the Harvard Annex for women.

Indeed, it is difficult, if not impossible, to leave Boston in almost any direction without finding evidences of the unusual admiration and care given to horticulture in its vicinity. —*Mrs. Ella Dickinson, in the Churchman.*

WOOD FLOUR.

A letter from the Catskills to the New-York *Sun* says: The chief industry up here is producing wood flour, a kind of cousin to wood pulp. It was first manufactured in the Catskills about nine years ago, and now over twenty mills are in full blast. The process is exceedingly simple. Any soft-wood tree—Poplar is the favorite—is felled and drawn to the mill. The bark and boughs are removed, and the trunk put in a machine which is nothing but a lead-pencil sharpener on a large scale, with four or more knife-edges instead of one. On starting the machine, the pencil sharpener revolves with great swiftness, and in a few minutes converts the log into a hundred miles of fine, clean shavings. These are ground and bolted exactly as in a flour mill. The product is a soft, fine, yellowishly white flour, similar in appearance to very well-ground Corn-meal. It possesses a slight woody smell, and is almost tasteless. It is put up in large bags, and then is dispatched, unmarked, to the buyers.

I tried to find out who purchased the article, but with no success. The wood miller was not very communicative. "It makes,"—he said,—"well, I don't know how much exactly. One log may give five bags, or it may give ten. It sells—well, that is, pretty tolerable. I reckon I clear about $8 or $9 a day out of it—perhaps more. I never figured it up. What's it good for? Good for many things. It's used to stiffen paper; but if you put in too much, the paper gets brittle. Paper stock is much dearer than Poplar flour, and that's why they put it in. If you mix the flour with linseed gum and 'biled' oil, you may get a kind of oil-cloth. Some folks mix it with meal to give to pigs and other animals. I guess it's good, but I never give it to my hogs; and even those fellows give it to some other fellows' critters, and not their own. Yes, I heard that some bad contractors mixed it with meal for army and Indian supplies, but I don't take much stock in the story, because they could buy sour meal as cheap as Poplar flour. It wouldn't pay to mill Pine, Cedar, or Hemlock; they are worth too much as timber. But any wood that isn't used that way can be milled into flour. I use Poplar almost altogether, but when I run short of logs I grind up Buttonball, Birch, Elm, or Willow."

The farmers dislike the new industry, as it promises to play havoc with the forests, which are both an attraction to the boarder and a protection to agriculture. The tanneries years ago used up all the Oak and Hemlock; the lumbermen have stripped the country practically of Pine, Cedar, and Walnut; the chair factories are consuming the Hickory and Maple; now the wood-flour mill promises to grind up what remaining trees there may be.

ELECTRIC BOUQUETS.

The latest novelty in bouquets—newer even than pink Water-lilies or blue Hydrangeas—was carried by the Princess of Wales at a ball after the races at Goodwood. It was of Roses, and in the middle of it was concealed a miniature electric lamp, the light from which could be turned on at will by means of a little switch in the form of a lady's brooch. Gentlemen's *boutonnières* are also so arranged as to contain an electric light.

"These, if they come generally in use," suggests the *Prairie Farmer*, "will deal a death-blow to flirtations in dark places, as a passing friend has but to turn on his battery, and lo! forms and features are revealed with uncompromising distinctness. Paterfamilias will probably be a willing patron of the electric *boutonnières*, as he can thus not only follow up and drive away ineligibles and detrimentals, but can collect his scattered forces as the small hours approach and gather them under his wings preparatory to departure."

VEGETATION ON COINS AND BANK-NOTES.

Recent researches of Paul Reinsch, in Erlangen, Germany, have revealed the occurrence of different Bacteria and minute Algæ on the surfaces of coins and bank-bills. By long circulation, coins become partly incrusted with a thin film of organic detritus, composed principally of starch-grains and fibers, which furnish favorable conditions for this microvegetation. On the surface of paper money, even of notes which appear perfectly clean to the naked eye, are always to be found the special Bacteria of putrefaction *(Bacterium Termo)*; while on those that have been long in use various microscopic plants are found in full vegetation, thus furnishing a ready explanation of how diseases are sometimes transmitted through money.

OUR BOOK TABLE.

The Hearthstone, Farm, and Nation is the title of a new Monthly, a Journal for Domestic and Rural Economy, Agriculture, Horticulture, Live Stock, Current Events, Education, etc., published by *W. H. Thompson & Co., Philadelphia.* The initial number contains a rich store of useful and entertaining information, carefully and ably edited, well printed on good paper, and is altogether as near the ideal rural family paper as any publication that comes to our table.

Outing.—The November number of *Outing* brings the magazine into new prominence in the added space given to yachting matters. This form of outdoor pleasure is represented in several articles of unusual interest, by a full record of nautical events. "A Scamper in the Nor'-West," by J. A. Fraser, profusely illustrated by the author, is the leading article, and gives the reader some fascinating glimpses of the shores of the "big sea-water" of Superior. Another capital illustrated paper is "Wheeling among the Aztecs," by Sylvester Baxter. This gives some delightful glimpses of the ancient city of Mexico and the pleasant environs that tempt the wheelman to his steed. The editorial department discusses "Art and the Bicycle," and "Physical Education in College," among other topics of the hour. The price of *Outing* is $2.00 a year. The Wheelman Co., Publishers, Boston, Mass.

Three Visits to America. By Emily Faithfull. 12mo, pp. xii, 400. Cloth. Price, $1.50. Published by Fowler & Wells Co., 753 Broadway, New-York. The author of this volume needs no introduction to an American public; her work in behalf of struggling women during the past twenty years has been attended with so much success that she has acquired wide-spread celebrity. Her three visits in this country were made for the purpose of studying our society, our industrial methods and organizations in behalf of poor and unfortunate English women, and the record of these three visits is not a rush into print to gratify personal motives merely, or to let the world know "my impressions of America," after the style of so many foreign tourists, but the notes of a warm-hearted, practical observer who is in earnest for the improvement of the condition of her fellow-women, and gives her best experience in the tracings of her pen. Few writers on America have seen so much of our country, talked with so many of our best people, and looked so deeply into our social habits and institutions; and as she relates the notable incidents of her journeys in a lively, agreeable manner, showing everywhere the woman of exuberant good nature, the reader is captivated at the start. Sketches of conversations occur all through the book, most of them with well-known people, all of whom cordially aided Miss Faithfull toward the attainment of her mission. But what will most interest the American reader are the chatty comparisons made of our social mannerisms with those of old England, and the tendencies that she thinks are clearly to be seen in popular sentiment as concerns trade, government, labor, the woman question, and so on. The eminent utility of what Miss Faithfull says here and there makes the book valuable; while it will entertain every one who takes it up, it will be sure to instruct those who are thoughtful.

N. W. Ayer & Son's American Newspaper Annual for 1884 contains a carefully prepared list of all newspapers and periodicals in the United States and Canada, arranged by States in geographical sections, and by towns in alphabetical order. In this list also is given the name of the paper, the issue, general characteristics, year of establishment, size, circulation, and advertising rates for ten lines one month. Then follows a list of all newspapers inserting advertisements, arranged in States by counties, with the distinctive features and circulation of each paper. Also complete lists of all the religious or agricultural periodicals, of medical, commercial, scientific, educational, or any other of the class publications, can be obtained from it. It will show you at a glance all the newspapers published in any one county in the United States and Canada. It gives the location, county-seat, and population of every county in the United States, the character of the surface, the nature of the soil, and its

adaptability to the growth of the various agricultural staples, of every State, territory, and county in the United States, and of each of the Canadian provinces.

In it is given the population of every State, territory, county, and county-seat; of all the large cities and towns, and of almost every place in which a newspaper is published; also the colored population, by counties, in the Southern and South-western States, and the Chinese population on the Pacific Slope. It also gives the political majority of every State, territory, and county. It has a list of the cities, towns, and villages of the United States having a population of five thousand and upward, arranged in alphabetical order.

It is unequaled for fullness, correctness, compactness of statement, variety and value of contents, and freedom from favoritism or prejudice.

Price, $3.00, carriage paid.

New-York Agricultural Experiment Station.—Report for the year 1883. This, the second annual report of Director Dr. E. L. Sturtevant, gives a still clearer insight into the scope and amount of work carried on at the Station than the previous one. Some of the results of the year's work have already been made known to our readers through the Station Bulletins, from which we have given frequent quotations. These weekly bulletins, issued by the director, are of inestimable value to the farmers of the State, and the entire country in fact, not only in giving accounts of the latest discoveries and investigations, but because they are distributed in so judicious a manner as to reach the largest possible number of readers. A million of volumes could not accomplish nearly the amount of good these little, unpretending Weekly Bulletins do. Let us have the Annual Reports for reference in our libraries; but for the most extensive distribution of knowledge, and for effective, practical work, give us the Bulletins.

One of the most formidable difficulties which confront the director, as well as agricultural experimenters generally, is to make farmers understand that the object of experimental work is not to raise the best and largest crops—market gardeners do this—but to discover the whys and whereofs, to verify and to disseminate.

"Agriculture in its practice," says the doctor, "is a complex art; it deals with factors of varied character and great divergency. Under the concrete terms of seed, soil, fertility, climate, protection, etc., we express the combined results of also varied and divergent factors. Were it possible to give expression to the values of each and all of these factors, not only by themselves, but in their relations, then we could hope to have an exact science, admitting of definite expression, admitting of verification, admitting of duplication in experimental trials. It seems to me that a thoughtful consideration of the principles involved in this idea must give hope that progress can be made, and that sooner or later the results of a careful study into the principles and relations governing agricultural pursuits will enable tables of constants to be established which shall avail to interpret for us the discrepancies now so familiar in practice, and will enable us to secure with accuracy the results for which we may plan. If a practice be claimed as successful, then should we be able by trial to verify its claims, eliminating the effect of local conditions, and getting an understanding of the truth or falsity of the principles upon which the claim may be founded."

The plat system of experimenting generally adopted by experimenters everywhere was, at the station, found more apt to afford incorrect than correct conclusions, caused by lack of uniformity of character in the seed used, differences in the number of plants which survive and attain maturity, and in differences in the soil of the various plats.

"A close acquaintance with the difficulties that beset our path," says the director in regard to this, "leads us to the candid admission that the most important portion of our work is the learning how to experiment, and how to interpret our results. We must expect to find much of our labor thrown away upon efforts which shall not yield an adequate return, and we must expect our path to be marked with failures, saddening at the time, but from which lessons may be derived for future progress. Indeed, in well-directed experimental trials, failures may be even considered at times of advantage, as teaching lessons which might not otherwise be learned.

"The leading aim of an experimental station such as ours must be by experimental study of the most careful kind to obtain knowledge of the action of the laws which find application in agriculture, and to devise methods for the application of the knowledge gained in order that in practical farming waste of means and effort may be diminished, and gain may be increased, and thus profits be forwarded."

The report of the horticulturist, Mr. E. S. Goff, shows that a conspicuous and important part of the garden work, the past season, has been the careful test of varieties. Seeds were planted of almost the entire list of garden plants offered by our American seedsmen, as well as many others from foreign countries. In this work were had other objects in view than the mere comparison of yields and qualities. All who have made the least study of varieties in vegetables know that there is much confusion in nomenclature. It was endeavored, as far as possible, to discover how many of the so-called varieties planted are really distinct, and how many are only synonyms. It was also desired to study the fixity of varieties, the trueness to which seeds reproduce to name and the variation, which are apt to occur.

The special reports show the period required for the germination of each variety, the percentage of vegetation, yield, and general characteristics. The extent of this work may be imagined when it is stated that of Beans alone two hundred and fifty varieties were grown.

So far the Station work has exceeded all reasonable expectations, and we feel pretty sure that the State of New-York has never appropriated money to better advantage than when it founded its Experiment Station.

CATALOGUES RECEIVED.

John S. Collins, *Moorestown, N. J.*—Catalogue of Strawberry, Raspberry, Blackberry, and other Small Fruit plants, Grapes, Fruit-trees, etc. A very complete list of all standard kinds, with descriptions and illustrations of the leading novelties, most prominent among which are May King Strawberry, Early Cluster Blackberry, and Comet Pear.

Thomas W. Wheathered, 46 *Marion street, New-York.*—Catalogue of Hot-water Boilers, and everything necessary for Heating and Ventilating Greenhouses. This elegantly gotten up and richly illustrated pamphlet gives, in addition to descriptions of the different patterns and styles of the justly celebrated heating and ventilating apparatus manufactured by this firm, a large amount of useful information about heating and ventilating greenhouses in general, of interest and value to every owner of a greenhouse.

ANSWERS TO CORRESPONDENTS.

Achimenes and Gloxinias.—*S. E.*—The bulbs of these and other gesneraceous plants should be planted in pots very early in spring, in the month of March or sooner even. Full descriptions and directions for their culture were given in our June number of the current year.

Datura arborea.—*H. F. W., Huntington, Ind.*—This plant, whose proper botanical name is *Brugmansia suaveolens*, is a native of Peru. It has been in cultivation a long time, but is not as frequently met with as it deserves. It will not stand our winters outdoors, and has to be taken up at the approach of frost, planted in a sufficiently large box or tub, and stored in a frost-proof cellar, giving it not more water than is required to keep its roots from shriveling. In rich soil it will grow ten to twelve feet high. It is easily propagated from stem or root cuttings.

Lilies and Dutch Bulbs.—*H. H., Fort Wayne, Ind.*—It is not advisable to plant Lilies and spring flowering bulbs together in the same bed, if for no other reason, for this, that when removal becomes necessary they cannot be dug at the same time without injuring one or the other. The object of having a continuous bloom may be more easily obtained by planting some shallow rooting plants between the rows of bulbs after blooming. Verbenas are specially adapted for this purpose, or Portulacas may be sown even before the end of the flowering season of the bulbs, and produce a glorious mass of flowers all summer without injuring the bulbs in the least.

Asparagus.—*R. S., Putnam Co., N. Y.*—Asparagus roots may be planted now or in spring; in either case the ground should be liberally enriched before planting. One hundred plants well cared for will yield enough for a family of four or five. Plants older than two years are not desirable, and unless two-year-old roots have had sufficient room while growing, we would prefer good, strong one-year-old ones. If planted in the fall, a light covering of coarse stable manure during winter will prove beneficial.

Eucharis.—*J. J., Parry Sound, Ont.*—This is a hot-house plant, belonging to the Amaryllis family, and requiring during its growing season a temperature of not less than 70° in day-time, and not less than 60° during night, with plenty of water and full sunshine. It may be potted at any time. The soil most suitable for its growth is a compost consisting of about equal parts of loam, leaf mold, sand, and well-decomposed manure. After blooming, they should be kept in a lower temperature and receive less water, but sufficient to prevent their drying off entirely, which should never be allowed. During the summer months they may be placed outdoors to advantage. For fuller directions, see May number of this year.

Propagating Dahlias.—*R. C., Delaware, Ont.*—The clumps may be divided in spring as soon as the buds appear; they may then be separated into as many pieces as there are eyes with a tuber to each. When large quantities are required they are propagated by cuttings. About February the clumps are placed in a warm greenhouse or hot-bed, to be forced into growth, and as soon as the shoots have grown two or three inches in length they are cut off at the base, potted singly in very small pots, and placed in a hot-bed. Where there is a propagating bench they may be planted in this, the same as other soft-wood cuttings. As they grow they have to be shifted into larger pots, and in May, after danger of frost is over, they are to be transferred to the open ground.

Hammond's Slug-Shot and Paint Works, located for the past ten years at Mount Kisco, N. Y., are about to be removed to Fishkill on the Hudson, as the constantly increasing demand for the goods manufactured by this firm requires more extended facilities than an inland village affords. We are glad to notice this indication of success, which, having ourselves used large quantities of the manufactures of this firm, we know to be fully deserved.

Ladies' Art Association.—Mr. Anthony Hochstein, the well-known artist of this city, teaches on Saturday afternoons at the rooms of this excellent society, No. 4 West Fourteenth street. His instruction is specially adapted to the higher education of those who are already teaching in schools and seminaries, as well as to those who wish to draw on wood for book illustrations. To those desiring to perfect themselves in the arts this offers a rare opportunity, as in the delineation and portraiture of flowers, plants, and natural objects generally Mr. Hochstein has few, if any, superiors in this country.

Twenty-five Hundred Meat-choppers are manufactured every week by the *Enterprise Manufacturing Company of Philadelphia*, whose advertisement appears on the outside cover-page. This will not surprise any one who has ever used this excellent machine. Of all the labor-saving implements used in our kitchen this bears the palm. For chopping up meat of any kind and degree of tenderness or toughness, as the case may be, a more effective and complete contrivance cannot be imagined. It is worked easily and rapidly, is readily cleaned, and withal is so simple in construction and so durably made as not to get out of order under decent treatment. It *is* a gem.

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Directions for culture are given with each package.

No. 1. *Wild Garden Seeds.*—A half-ounce packet. This novelty in flower gardening, which was first introduced as an AMERICAN GARDEN *premium*, continues to be a general favorite; and being in greater demand than ever, we retain it among our premiums. The present selection contains over 100 varieties of choice flower seeds, which, in single packets, could not be bought under $5.00.

No. 2. *Pansy, Bliss's Perfection.*—This strain eclipses anything hitherto offered, and for variety of markings, beauty of form, large size, good substance, and splendid satiny texture, is likely to remain unrivaled for a long time to come.

No. 3. *Single Dahlias.*—A packet of seeds carefully selected from over 100 varieties, comprising all the most brilliant and decided colors. If sown in early spring, in pots in the house or in the hot-bed, flowering plants may be had by midsummer.

No. 4. *Hollyhock, choice double mixed.*—This plant has become very popular of late, and deservedly so, for its stately growth and varied colors commend it to a place in every collection. The seed offered has been saved from an unsurpassed European collection.

No. 5. *Balsam, "White Perfection."*—The immense pure white flowers of this variety are of the most perfect Camellia form, and for pot culture or cut flowers in winter is most desirable.

No. 6. *Everlasting Flowers.*—A mixed packet of 12 distinct varieties. This class of flowers is constantly increasing in favor, and for winter bouquets and decorations generally nothing is more treasured. All are annuals of easy culture.

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VEGETABLE AND FARM SEEDS.

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No. 9. *Pea, Bliss's Abundance.*—One packet. A new early dwarf variety, pods 3 to 3½ inches long, containing 6 to 8 large wrinkled Peas of excellent quality.

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No. 12. *Water-Melon, American Champion.*—One packet. No other variety combines so many valuable qualities.

No. 13. *Potato, Charter Oak.*—One tuber. Flesh snowy white, fine grain, well flavored, cooks dry and mealy. It is one of the most promising of the new varieties that have lately been brought into notice.

PLANTS AND BULBS.

No. 14. *Triloma uvaria* (Red Hot Poker Plant).—A highly ornamental herbaceous plant, producing in summer and autumn dense flower spikes, averaging about two feet in length, and of a brilliant Orange-red color. The effect produced by these flame-colored flowers is admirable, and considering its easy culture, we consider this one of the best hardy plant premiums we offer.

No. 15. *Calla Æthiopica* (Lily of the Nile).—Every one knows this stately plant, so popular on account of its easy culture, and so desirable on account of its fragrance and free flavoring habit. We offer a strong root, which, with proper treatment, will flower this season.

No. 16. *Clematis crispa.*—This is a beautiful and distinct species, recently introduced, the flowers of which are from one and one-half to two inches in diameter, and in form resembling a bell-shaped Lily; the color is best described as a beautiful lavender-blue, with a peculiar combination of opaque white, while the perfume is of a delicious piquant *bergamot* flavor.

No. 17. *Tigridia grandiflora alba* (now white Tigridia).—This splendid acquisition was the center of attraction wherever exhibited the past season. The flowers are pure white, and larger than the other varieties of this family.

No. 18. *Lily of the Valley.*—Six flowering crowns of this charming universal favorite, the pleasing and delicious odor of which no one ever tires of. It thrives well in shady places, and as a winter window-plant its deep green foliage and white flowers make it always welcome.

No. 19. *Clematis coccinea* (Scarlet Clematis).—One of the most desirable climbers for covering verandas, trellises, arbors, screens, etc., as it grows from eight to ten feet in one season. Its coral red flowers are produced in great profusion.

No. 20. Valuable Seeds.—Any one sending subscriptions to THE AMER. GARDEN at $1.00 a year, can select, from the previous columns, one premium for himself or herself in addition to the one offered to the subscriber; or, in lieu thereof, send for the "Hand-book of the Farm and Garden" (to B. K. Bliss & Sons, 34 Barclay street, New-York), and select twenty-five cents' worth of any seeds therein named for each subscriber sent in.

No. 21.—Those sending 4, 5, or 6 subscribers may select 30 *cents'* worth of seeds for *each*.

No. 22.—Those sending 7, 8, or 9 subscriptions may select 35 *cents'* worth of seeds for *each*.

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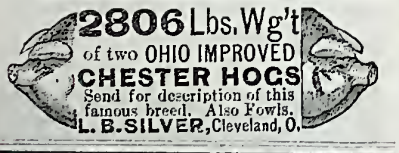

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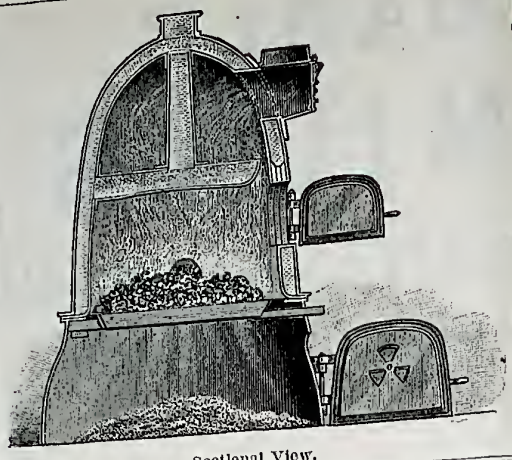

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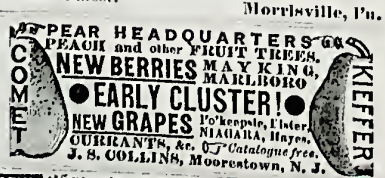

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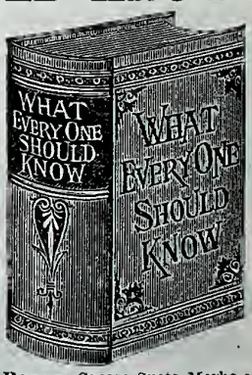

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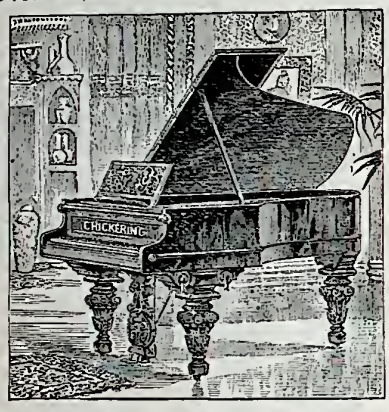

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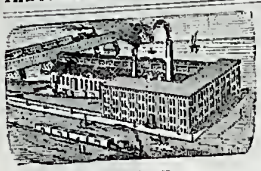

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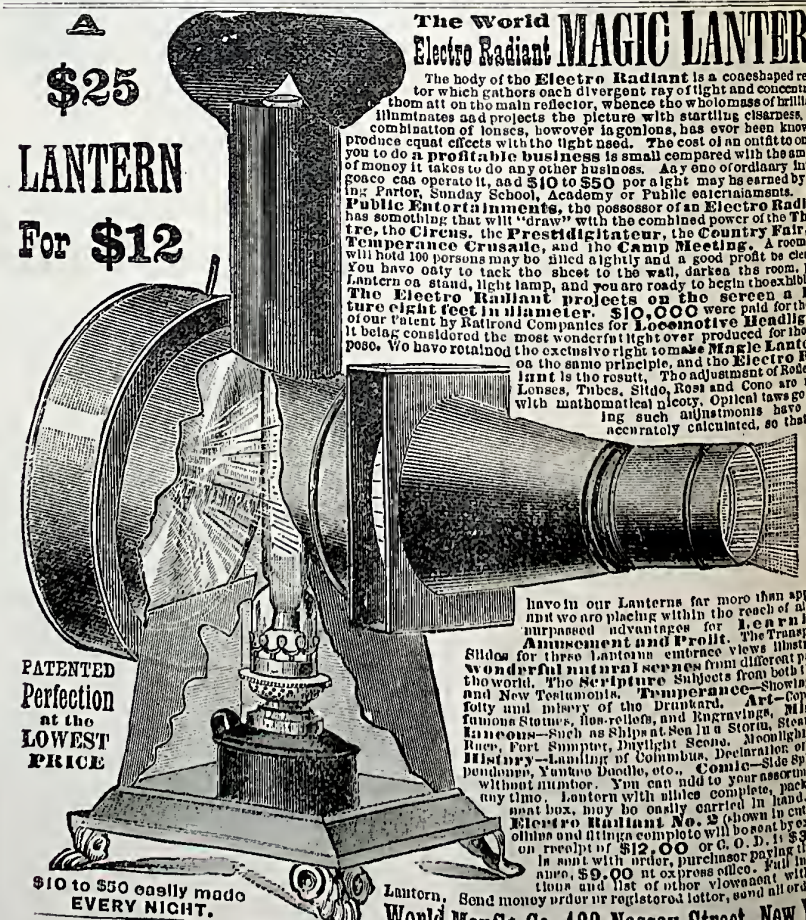

The body of the **Electro Radiant** is a coneshaped reflector which gathers each divergent ray of light and concentrates them all on the main reflector, whence the whole mass of brilliancy illuminates and projects the picture with startling clearness. No combination of lenses, however ingenious, has ever been known to produce equal effects with the light used. The cost of an outfit to enable you to do a **profitable business** is small compared with the amount of money it takes to do any other business. Any one of ordinary intelligence can operate it, and **$10 to $50** per night may be earned by giving Parlor, Sunday School, Academy or Public entertainments. For **Public Entertainments,** the possessor of an **Electro Radiant** has something that will "draw" with the combined power of the **Theatre,** the **Circus,** the **Prestidigitateur,** the **Country Fair,** the **Temperance Crusade,** and the **Camp Meeting.** A room that will hold 100 persons may be filled nightly and a good profit be cleared. You have only to tack the sheet to the wall, darken the room, place Lantern on stand, light lamp, and you are ready to begin the exhibition. **The Electro Radiant projects on the screen a Picture eight feet in diameter. $10,000** were paid for the use of our Patent by Railroad Companies for **Locomotive Headlights,** it being considered the most wonderful light ever produced for the purpose. We have retained the exclusive right to make **Magic Lanterns** on the same principle, and the **Electro Radiant** is the result. The adjustment of Reflector, Lenses, Tubes, Slide, Rods and Cone are made with mathematical nicety. Optical laws governing such adjustments have been accurately calculated, so that you have in our Lanterns far more than appears, and we are placing within the reach of all, unsurpassed advantages for **Learning, Amusement and Profit.** The Transparent Slides for these Lanterns embrace views illustrating **wonderful natural scenes** from different parts of the world. The **Scripture** Subjects from both the Old and New Testaments. **Temperance**—Showing the folly and misery of the Drunkard. **Art**—Copies of famous Statues, Bas-reliefs, and Engravings. **Miscellaneous**—Such as Ships at Sea in a Storm, Steamboat Race, Fort Sumpter, Daylight Scene, Moonlight, etc. **History**—Landing of Columbus, Declaration of Independence, Yankee Doodle, etc., **Comic**—Side Splitters without number. You can add to your assortment at any time. Lantern with slides complete, packed in neat box, may be easily carried in hand.—The **Electro Radiant No. 2** (shown in cut) with slides and fittings complete will be sent by express on receipt of **$12.00** or C. O. D. it $3.00 is sent with order, purchaser paying the balance, **$9.00** at express office. Full instructions and list of other viewsent with each Lantern. Send money order or registered letter, send all orders to

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The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

Vol. V. NEW-YORK, DECEMBER, 1884. No. 12.

MERRY CHRISTMAS TO ALL.

With each succeeding year our holidays assume more of a national character, obliterating sectional customs and usages, thus making us more akin in sympathy and interests, drawing firmer the common bond of brother and sisterhood, and uniting us more and more into one nation, one people. There was a time, and not long ago, when Christmas was unobserved and hardly known throughout New England, business being carried on on this as on any other week-day. Instead of this, another day was set apart for family gatherings and general merry-making, and called Thanksgiving Day. In this New England's forefathers "builded better than they knew."

Thanksgiving Day is no longer merely a Puritan local institution, no longer a State holiday only, no longer unknown, in the remotest corner even of our vast national domain. And while now the entire nation observes this great holiday instituted by the Puritans, they have themselves reinstated old Christmas, and are celebrating and enjoying it with as much zest as was ever put into it in Old England. The fact that we do not have more such holidays is only to be regretted; if we had one every month we would all be the better and happier for it. As it is, we must concentrate our holiday moods upon the few we have, put our whole heart into them, and celebrate them with all the good-nature that is within us.

Christmas is preëminently the children's holiday. What glorious memories cluster around that hallowed day that transport childhood to fairy-land! And while to the young it is freighted with the most delightful visions their imaginative minds can conceive, in those of maturer years it revives youthful joys and pleasures, makes the whole world buoyant, young, and bright again.

How fortunate it is that the occurrence of this sublime day falls just in midwinter, when without everything is drear and cold and desolate, so that the contrast of the cheerful fire on the hearth, the bright greeneries on the walls, the brilliant glitter of the Christmas-tree may be the more appreciated, and reflect their warmth and cheer upon our own minds and hearts. A Christmas in midsummer amidst green fields and blooming gardens and under the depressing influences of summer heat would be deprived of its greatest charms. "Bringing home the Christmas-tree," so beautifully represented in our illustration, is inseparable from snow and winter weather.

BRINGING HOME THE CHRISTMAS-TREE.

The forms of observing Christmas vary greatly among different peoples, according to custom and their ideas how to impress the child's mind most effectively. While to one Santa Claus fills the stockings from his boundless bag, to another Kriss Kringle, with his swift reindeers speeding over forests and house-tops, brings his treasured gifts, and to another the lovely Christ Child makes a present of a brilliantly lighted and adorned Pine-tree, laden with gifts, America is gradually developing a Christmas observance of its own. We have already adopted some of the most beautiful customs and observances of several European nations, and amalgamated them with the all-pervading spirit of Christianity, making it a day of heart-gladdening, of charity, of love for all; for the rich to be made joyful and charitable by giving, for the poor to be made happy and thankful by receiving. On this day differences of rank and position, of wealth and poverty, are made to give way to our better selves, to a fellow-feeling for all mankind, that lifts us above our every-day routine of life into purer and better realms. To all alike the Christmas bells announce that the world is far better, far more beautiful, than moments of gloom may have made us believe; and while the carols may be old and familiar — so sublimely beautifully expressed in Longfellow's immortal lines—the kindly feeling, the charity, the love, the life they bring with them are always young and joyous to all who will open their hearts to their sweet, harmonious sounds:

"I heard the bells on Christmas-day,
Their old, familiar carols play,
And wild and sweet
The words repeat
Of peace on earth, good-will to men."

CHANGE OF OWNERSHIP

OF THE AMERICAN GARDEN.

For announcement as to the future of this popular horticultural publication, see page 238 for full particulars.

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The Vegetable Garden.

SEASONABLE HINTS.

Spreading Manure in Winter.—While, for most garden crops, decomposed and finely broken up fertilizers are preferable to coarse, raw material, fresh stable manure is much better than no fertilizer at all, especially when applied during winter. The wastes from manure spread and exposed on the surface of the ground during winter are generally much overestimated; and we feel inclined to think that the losses from fermentation in the compost heap are not less than those from evaporation when spread over the field.

Fresh stable manure contains but very little ammonia—its only fertilizing ingredient that can become lost by evaporation—and the low temperature of winter is not favorable to its formation. The greater part of its nitrogen will, therefore, be transformed into nitrates, which become readily absorbed by the soil.

The danger of fertilizing matter being washed away on sloping land is likewise very small. We have frequently noticed, on hillsides of considerable inclination even, where large manure heaps have been piled up during winter to be spread before the plow in spring, that the effect of the manure could not be noticed in the growing crops for more than a few feet from the heap in either direction.

Many a farm garden, if it is to receive an allowance of manure at all, must secure it during winter, when men and teams have more leisure than in spring. In all such cases we would strongly impress upon the manager of the family garden that the wisest policy to pursue is to take all that can be had now. If possible, the ground should be plowed first, but not harrowed, and then the fresh manure spread evenly over it—the thicker the better. Most of its fertility will soak into the ground before spring, and the coarser part that remains on the surface is to be plowed or spaded under lightly next spring.

Plowing the garden in narrow lands with deep, open, dead furrows between them, running with the slope of the land, will not only leave the soil in finer and mellower condition in spring, but admits of its earlier working. On cold, heavy ground this is of special importance, and makes often a difference of from one to two weeks in the earliness of the first crops. The dead furrows have to be examined occasionally after heavy rains during winter, and cleaned out if clods should impede the free current of the surface water.

Asparagus Beds should now receive a good covering of stable manure; it is immaterial whether the ground is frozen or not. If the roots are not deep enough below the surface for the crowns to be secure from injury in cutting the stalks, this is a favorable season for carting additional soil on them. Asparagus roots planted deep, in well-enriched soil, do not only produce more delicately flavored stalks, but uniformly larger ones, than when planted near the surface of the ground.

Rhubarb, likewise, is much benefited by a liberal covering of manure, and will amply reward this attention with a bountiful supply of large, succulent and tender stalks.

POTATO SEEDLINGS.

It is rare fun to raise seedling Potatoes, and does not cost much either. The seed from the balls can be sown in a shallow box with earth in it early in March if you choose, and kept in a warm room near the window. When I came to transfer the young plants, of which there were several hundred, to the garden, the precocious little upstarts already had new Potatoes on them, though the plants were no more than two inches high. Philoprogenitiveness must be large in the Potato, one would judge upon observing this precocious tendency.

In the fall, when the first season's growth is completed, it is amusing to pull up the little plants with the whole new-born family of Potatoes attached to them, differing in size from that of a Walnut down to a pin-head, exact representations of what they intend to be on a larger scale in future years. You can form a correct estimate the first year of many of the characteristics of a new variety; whether prolific or otherwise; whether round, long, flat, or smooth.

Although most seedling Potatoes have a strong family likeness derived from their parents, there are also to be found among them many marks of individual character and originality. I have sown thousands of seeds, from the White Peachblow, the parent of which was red, hardy, and full of life and vigor. It was curious to notice what a mingling there was of the characteristics of the parents and the grandparents in the generation that followed. In regard to color, there seemed to be every conceivable variation. At one extreme I had a monstrous red Potato, rough, with deeply sunken eyes, with red veins threading its short, stout, abundant, and stocky stems and leaves. Moreover, the inside of the Potato was as red as a Beet. According to the estimate that I made of the quantity obtained from a dozen hills,—the product of a single tuber,—it yielded at the rate of six hundred bushels to the acre. It manifested much willfulness and hardness of heart, which became apparent when I undertook to have some moderate sized specimens cooked, and accordingly had them put in the steamer with the rest that were intended for dinner. I waited with all impatience for the cook to bring them on so that I could give them the first trial. But they were not forthcoming, and I missed them that day. Upon inquiry I learned that the obstinate tubers would not soften in the hot steam in the same time that it took the others to cook. So another trial was made the next day, and after remaining about twice as long as its neighbors in the hot steam, it finally yielded. On opening it, its intense pink color did not seem the "pink of perfection" in a Potato, and though I have tasted worse Potatoes than that, it was tolerably mealy.

On the whole, I could not recommend that Potato to poor people, for, notwithstanding it was an immense yielder, it would cost so much fuel to cook it, that the economy of raising it was not clearly demonstrated. I christened it "The Mastodon."

In striking contrast to this was what I called "The Peachblow's Grandson." It was smoother than its mother, the White Peachblow, and larger, and I liked it so well that we raised over sixty bushels of it.

Varying between the two kinds above described were to be found red Potatoes with red streaks inside; red Potatoes that were white or yellow inside; Potatoes that were pure white inside and out; Potatoes with irregular blotches of red and white; Potatoes black and purple; Potatoes long, round, flat, and with every conceivable intermediate form.

Some of the thousands that I raised were half as big as my fist the first year, while many were no bigger than Peas. Usually they were large enough to admit of a fair judgment of their qualities the second year.

If it were possible, I would like to analyze and explain the peculiar charm that attends the raising of seedlings. The nearest that I can do is to point to one peculiarity combined with it and common to many other forms of human activity, namely, that people take hold of it with zest.

Every one loves to control and direct great and mysterious forces, the working and results of which cannot be easily estimated. It is fascinating to a novice to hoist the gate of a water-wheel that drives a great mass of machinery, to control the motions of a locomotive, to fire a gun, or to drive a spirited or powerful team of horses,—in short, to do anything that moves and directs a power greater than one's self.

Just so in raising Potato or any other seedlings we are dealing with the great, powerful, and mysterious principle of creative forces, capable of producing curious and grotesque as well as beautiful and valuable results. One feels almost as being taken into a kind of partnership with creation, which permits us to take part in the work of improving and beautifying the earth. We imagine ourselves wielding a power capable of producing results far beyond the limits of our conception.

H. J. SEYMOUR.

BLEACHING CELERY.

The method of bleaching Celery, used by James Wright, of East Toledo, who raises the finest Celery that *J. S. Woodward, of the Rural New Yorker*, says he ever saw, and which never produces rust, is that he merely earths a little, to keep the stalks upright until sufficiently grown; he then has some strips of the thinnest, lightest tin, about fourteen inches wide, and in the after-part of the day, when the Celery is perfectly dry, he first suckers the plants, removing everything that would not make first-class Celery, and then wraps one of the pieces of tin about the plant, and over this he slips a three-inch round tile twelve inches long; then draws the tin out, leaving the Celery compact and straight inside the tiles. It will bleach finely in two weeks in hot weather, and as the weather gets colder it takes longer—up to about four weeks. The labor of applying and removing the soil commonly used costs about as much as the tiles.

PLANTING MELONS WITH POTATOES.

A correspondent of the *Western Plowman* experimented with raising Melons among Potatoes, and found the method effectual in ridding the Melon vines of the striped bugs. He suggests that it would be a good plan to plant Potatoes or something else with the Melons, to hide the vines until the bug season is over, and then dig the Potatoes and let the Melons have all the room.

THE SQUASH AND ITS CULTURE.

As a contribution to the table, the rich and mealy flesh of the improved varieties of Winter Squash occupies a place that nothing else can entirely fill. It has become almost a necessity, in its season, to those who set fine tables; and, with roast turkey and Cranberry sauce, it is always associated in our minds with the festivities of Thanksgiving and Christmas.

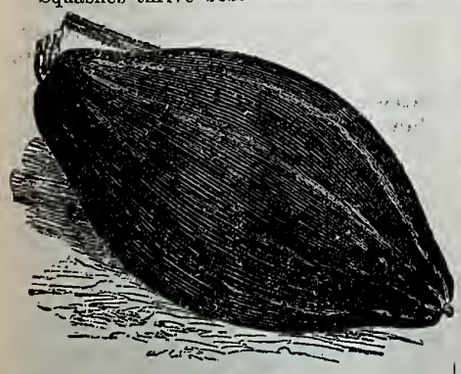
The Squash, in its best estate, is decidedly a modern vegetable. True, the old, warted

BOSTON MARROW SQUASH.

Crook-necks, with their pale, insipid and watery flesh, are relics of the Puritan days. But the delicious Hubbard, Butman, Marblehead, Olive and Boston Marrow are all children of the latter decades. Unfortunately, these highly improved varieties have left off a part of the vigor and hardiness of their coarser ancestors. Some claim that this weakening of the constitution is an inseparable companion of refinement in quality in all our fruits and vegetables. Can this be true?

Although the Squash seems to be peculiarly at home in the gardens of New England, it is none the less a tropical plant. Its foliage is sensitive to slight frost, and its vine develops best in our hottest and wettest seasons. Therefore we should plant Squashes on the warmest soil, and, when possible, in a sheltered situation. It is little use to plant the seeds before the ground has become well warmed in spring. If planted too early they are liable to rot during cold rains. In the Northern States the middle of May is early enough.

Squashes thrive best when an abundance

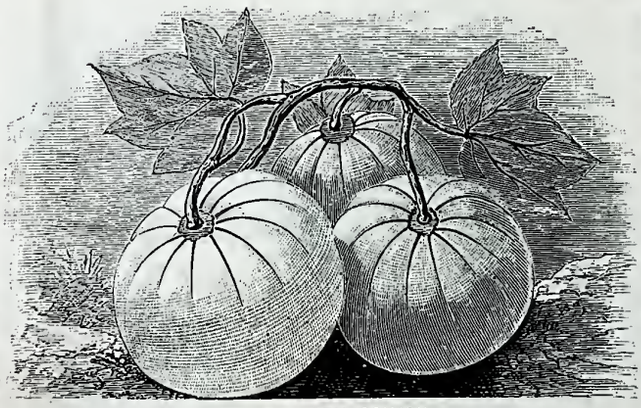


OLIVE SQUASH.

of well-rotted manure is used. Some recommend putting all of the manure in the hill where the seeds are planted. It is a question, however, if it is not better to spread it over the whole surface of the ground, working it into the upper six inches of the soil. We are apt to forget that the roots of Squashes creep nearly as far as their stems. They like the warm soil near the surface, and it is well to put the manure where the roots naturally grow. A little bone-dust or guano thoroughly mixed with the soil of the hill before planting will prove a valuable addition as a stimulant to the young plants.

Insect enemies form the chief obstacle to successful Squash growing. For the private gardener I have no hesitation in recommending protection for the young plants as the best means of escaping the ravages of the striped bug. Light boxes, without bottom, covered with mosquito netting, placed over the hills before the plants are up, are a certain remedy. For the Squash-borer, that begins its depredations later in the season, I have used the past summer, with marked success, half a teaspoonful of Paris green, mixed with a gallon of water, sprinkling the mixture upon the stems after every rain. In vigorous running varieties like the Hubbard, the stems should be wet with the mixture for a distance of at least six feet from the base of the plant. The application should be commenced about the middle of July, and be continued until the middle of September.

The summer varieties of Squash, though less popular than the winter sorts, are nevertheless worth raising. They are more hardy, and occupy less room than the later ones. Perhaps the best varieties for summer are the White and Yellow Scallop Bush. These



PERFECT GEM SQUASH.

may be planted in rows six feet apart each way. After the fruits of these become too hard for use, it will be time to commence upon the winter sorts. For quality I can name no better varieties for autumn and winter than the four mentioned near the beginning of this article. The Perfect Gem is hardier than any of those named, but, though very good, is, with me, a little lacking in richness.

When stored in a cool, dry room, that is never allowed to go below the freezing point, the Hubbard, Butman, and Perfect Gem will keep until January, or even longer.

"ELM."

PEAS AND LIMA BEANS.

Although it will be some time before we shall plant Peas and Beans again, some statements about Peas in recent numbers of THE AMERICAN GARDEN suggest that my experiments in Pea planting may be of interest to some of its readers.

I like to plant Peas early by thoroughly preparing the soil, getting it in a good condition, and planting the seeds not less than three inches deep, covering it well. I find that Peas do best on a good, loamy soil, partially mixed with sand.

This year I tried the American Wonder Pea, McLean's Little Gem, Tom Thumb, and Cleveland's Rural New Yorker. Planting all the same day and in the same kind of soil, and giving the same kind of cultivation, the American Wonder gave me the earliest and the most prolific crop.

I also tried the plan of planting bush or running Peas in circles, instead of in rows.

HUBBARD SQUASH.

My usual plan is to plant two rows four or six inches apart, and the next two rows two feet from the first, so as to give room to walk between when brushing. This year I planted a plot in small circles about one foot in diameter, close together in the row, and the rows far enough apart, so that I could walk readily between them. A good stout brush, with as many branches as possible, was stuck in the middle, and answered for all the vines in the circle. I find it much easier picking, and as an equal number of vines can be raised in a row of circles as in two rows planted in drills close together, and less brush is required, I am convinced that this plan is a considerable improvement.

Last year I tried the plan of planting a row of Lima Beans reasonably close together, and then brushing the same as Peas, only using longer and stouter sticks than for Peas. Although I had planted but one small row that way, I liked it so well that this year I tried the plan more fully, and must say that it was a decided improvement, as I can raise more Beans in the same space of

BUTMAN SQUASH.

ground, with less cultivation, than by the old method of having three or four Beans planted around each pole.

It has also the additional advantage that they bear earlier, as every grower of Lima Beans is aware that the vines will not bear much before they have reached the top of their supports, unless they are pinched in.

N. J. SHEPHERD.

The Fruit Garden.

SEASONABLE HINTS.

Keeping Grapes.—It is of no use to try to keep Concords in good condition for more than a few weeks. After having tried almost every method recommended, we have given up the attempt to keep thin-skinned varieties, and we fully agree with the sentiment somewhat tersely expressed by the *Farm Journal*:

"Fussing up Grapes with cotton, sawdust, paper, wax, and so on, to keep them into winter, is all nonsense. Let the Grapes ripen perfectly, and then carefully pack into shallow boxes, or baskets, and, without changing or disturbing, keep them in the coolest place you can command. That's all there is of it. The cooler the better, so they don't freeze. Some Grapes wont keep any way; don't fool with them. Try the thick-skinned ones. Diana, Catawba, Isabella, and Salem have good reputations as keepers."

Selling Fruits.—A few Pears, Apples, Peaches, with a bunch or two of Grapes, and a few green leaves and flowers on the top, all neatly arranged in a small basket and costing at retail about twenty-five cents, sell readily in our fruit stores for seventy-five cents to a dollar, simply because the whole arrangement is pleasing and attractive and convenient to handle. This same principle applies to the selling of almost everything, and fruit-growers might take a hint or two from the lesson.

Some fruit-growers also injure their reputation as well as their pockets, more than they are aware of, by dishonest "topping off." To sell a barrel of inferior fruit for first-class because its top is veneered with a layer of good specimens is as much a fraud as it is to sell plated ware for solid silver. Market men suffer from this, unfortunately, growing practice fully as much as the growers themselves, as consumers prefer not to buy at all rather than be cheated every time.

"The principal discouragement to the purchase of Apples by the barrel by families," said a prominent Washington Market dealer, "is the contemptible way of filling barrels; a nice layer on top and bottom, but the majority small, mean fruit."

Labels.—The most durable and convenient label for trees is a strip of rough zinc. If ordinary smooth zinc has to be used, it should be immersed in diluted muriatic acid for a few minutes, to roughen the surface. Ordinary pencil-writing will last for many years on such labels; they may be fastened with a copper wire, or if the strips are cut long enough their ends may be twisted around small limbs.

There is nothing more discouraging, after having planted a collection of fruits, than to find when they come into bearing that the labels have become detached and every trace of them lost. The wise thing to do, therefore, is to examine every newly planted tree before winter storms have blown off the labels, and fasten them securely. And the still wiser thing after that is to make an accurate map of the orchard, no matter how rough, indicating the exact position and name of every tree, so that it may be identified at a glance, independent of labels.

PRUNING RASPBERRIES.

When I began cultivating Raspberries the bush method was unknown, and I pruned only in the spring. During the summer the canes were not pruned, and I did not remove the old canes in the fall. In the spring I broke or cut out the old canes, cut back the green wood to a length of shoot of three to four feet, and tied the bushes to stakes, and later wired them to stakes, or tied them to wire stretched along the row. Even yet the bush method does not obtain in many localities, and for those it will be well to say something of fall or spring pruning.

I began by removing the old canes in the spring, but became convinced it was better to remove them early in the fall. It is objected to the removal of the old canes in the fall that their leaves would yet play an important part in the growth of the young wood; that they would hold the snow; and that as the condition of the hill the next spring cannot be determined, the work must be partial and done at hap-hazard.

In reply to this I have to say that, in my locality (western Illinois, just on the fortieth parallel), the canes have winter-killed but once in a dozen years, and then the injury was only partial; that I have found the old canes inadequate to hold the snow against our driving prairie winds, and that only one winter was the protection of the snow required; that the new canes as effectually secure the drifting of the snow about them, when we have a drifting wind, as they would together with the old canes; that the office which the leaves of the old canes perform in the growth of the new is greatly overestimated in its importance, if such office exists at all; that it is much more convenient to do this work in the fall than in the spring, when there is certainly enough other work to keep us busy; and that the field looks much better without the old canes than with them. In addition, by cutting out and burning old canes (the latter should always be promptly done) soon after fruiting, you will destroy noxious insects and worms in various stages of growth, which otherwise would injure the canes.

Some extensive growers of my acquaintance do not remove the old canes at all. They claim that this slovenly plan works well, but on general principles I would oppose it, though I must confess that I have never tried it. I have found no difficulty in properly treating the new canes in the fall, and I do not see why any person of good judgment should.

The bush method saves stakes, wire, or twine, and all the disagreeable work of tying up, and I would strongly recommend it, though it entails frequent prunings during the summer. But those prunings can be done very rapidly. The object is to transform the cane into a little tree which will be self-supporting. As the pruning consists in removing the tip of the cane only, it can be done by pinching with the thumb and finger, or with a pruning-knife, large scissors, hedge-trimmer, or sheep-shears; but as pinching allows of the use of both hands, it is the best method.

The first year's growth must be pinched back when eight or ten inches high. Each succeeding year the tips of the growing shoots are pinched back when from twenty-four to thirty inches high. This stops their growth upward, and as the energy of the cane must expend itself in some direction, it throws out laterals. These laterals balance and support the stem and do away with the necessity for supports. As not all the canes will be ready for pinching back at the same time, it will be necessary to go over the plantation about once a week, walking between two rows and pinching on each side. In the end you will gain time by making weekly prunings, when you can pinch off the tip between your thumb and finger, instead of pruning only once, when you will have to remove more or less wood; and the first is by far the best for the canes.

In spring the laterals must be cut back to a length of about one foot, and for this pruning I have found nothing so good as a pair of sheep-shears. With these or a pruning-knife the work can be done very rapidly. I have not been as successful in my efforts to train the reds into bushes. It is best not to pinch them back at all the first season, but afterward to keep them well cut back.

JOHN M. STAHL.

INFLUENCE OF POLLEN UPON FRUITS.

Prof. Lazenby's carefully conducted experiments with pollenating pistillate varieties of Strawberries seem to furnish unmistakable proofs that the appearance and character of the berries are modified by the pollen. The characteristics of the male parent were plainly evident in each case, with the Crescent as well as the Manchester.

Where the pollen of the Cumberland was used the color was very light and the berries exceedingly soft. Those fertilized with the pollen of the James Vick were small, but very firm and remarkably perfect in outline. The cross with the Charles Downing showed a marked resemblance in shape, color, and consistency to this well-known variety. Where the Sharpless was used as the male parent the berries were large and irregular, and much more imperfect than those of any other.

STRAWBERRY FERTILIZERS.

Bone-dust and wood-ashes will supply all that may be lacking for Strawberries in any soil, says M. Crawford, of Ohio, and these can be obtained in nearly all parts of the country. Of all the commercial fertilizers none is safer to buy than pure ground bone. It must, however, be decomposed before the plants can use it, as they take up all their food in solution. For immediate effect it is sometimes advisable to use dissolved bone (superphosphate of lime), which will be washed down to the roots by the first rain.

THINNING PEACHES.

Thinning fruit is one of the arts which are less understood and practiced by fruit-growers than any other; yet every one who tries it becomes convinced of its great usefulness, and the following experience of our esteemed correspondent, Wm. M. Bowron, of Tennessee, is well worth remembering another season:

After having thinned the Peaches from a particular tree that last year produced fruit the size of small Plums, so as to leave only one Peach to a spur, the tree was borne to the ground with the largest fruit in my garden.

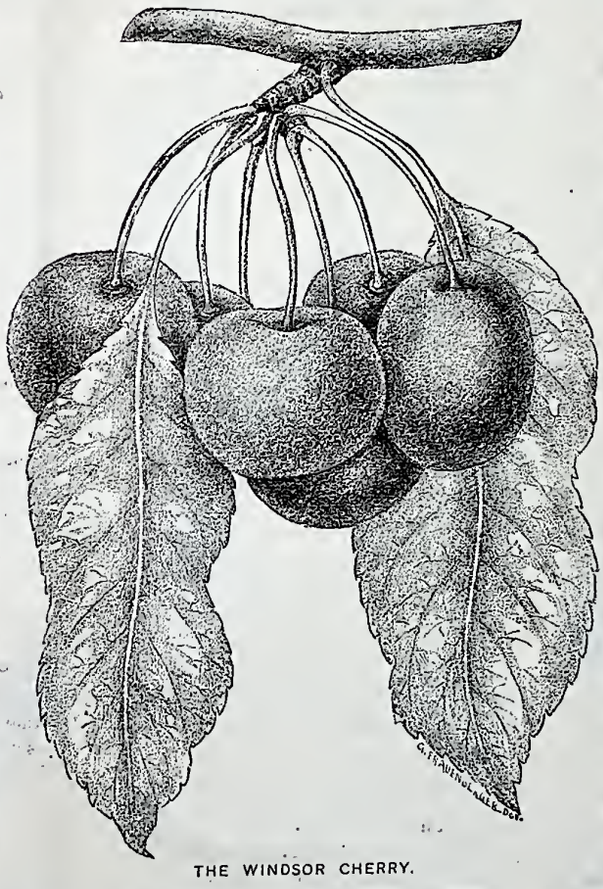
A VALUABLE NEW CHERRY.

THE WINDSOR.

Early ripening has for some time been considered by many the leading point to be gained in new fruits, and frequently to the neglect of other not less desirable qualifications. For home use and for northern markets lateness is often of more importance in a variety than extreme early ripening.

The accompanying illustration shows the shape and general appearance of a new Cherry, which seems to possess all the desirable qualities of a late variety. It is now being introduced by Messrs. Ellwanger & Barry, of Rochester, N. Y., who describe it as follows:

"Fruit large, liver-colored, resembling the Elkhorn, or Tradescant's Black Heart, nevertheless quite distinct; ripens three or four days after that variety; flesh remarkably firm and of fine quality. Tree hardy and very prolific. Promises to be a valuable late variety for market and for family use."



THE WINDSOR CHERRY.

VENTILATION FOR FRUIT CELLARS.

The fruit crop, or that portion of it which is to be stored during winter, is now, doubtless, in the quarters that it is to occupy for many months to come. The greatest drawback to good preservation in our cold northern climates, is the close air in which we have to confine our fruit in order to keep it secure against frost.

We have learned from experience that the temperature of the fruit cellar must be kept well down toward the freezing point, so that fermentation may not take place in the juices of the fruit, thus causing early decay; and we have learned, too, that where the temperature of the cellar is kept so low, that the moisture and heavy impurities, which gather where fruit or vegetables are stored, will not readily pass off from a cold and consequently heavy air that holds them near the ground.

Such heavy air will not readily rise and pass off through the ordinary channels provided for ventilation. To make it rise it must first be lightened. How to lighten the air or raise the temperature of the cellar, without injuring the fruit stored within, was a question that has long baffled me.

One winter, as an experiment, I stored my fruit well back from the center of the cellar, and placed a small wood heater in the middle of the large space thus left. It was an extremely cold winter, and my heater served two purposes—preventing the temperature from getting too low, and giving my cellar splendid ventilation.

I kept only a very light fire for perhaps two or three hours a day. The board partitions and straw covering over the bins protected the fruit against any undue heat, while the heavy foul air of the cellar was warmed and lightened by this means, and drawn off through the stove and chimney.

As I had no facilities to carry the piping up into the chimney-flue of the house, I constructed a chimney in the following manner, a description of which may interest others who are similarly situated.

I took two pieces of inch lumber four inches wide, and two that were eight inches wide each. One side of these pieces I covered over with sheet-iron, drawing it tight and firm, and nailing it on the edges of the boards. Then I put the four pieces together so that they made a sheet-iron lined flue with a throat of four inches by eight. I used long, heavy nails in putting it together in order to draw the joints tight and close. In the lower end that was to rest on the ground, I fitted an end piece similarly sheeted over. About four inches above this and in the broad side of the flue was cut a hole of the size of the pipe to be used, the edges of which opening were also protected with strips of sheet-iron.

This flue was placed just outside the cellar window, the foot of it on a large flat stone, and the top, sixteen feet above, fastened by strips of zinc to the gable end of the kitchen wing. A pane of glass was removed from the cellar window, and in its place was fastened a sheet of iron with a hole for the pipe to pass through. There were two elbows and a long stretch of pipe before it entered the chimney, so that with a light fire there was but little heat to endanger the woodwork of the flue.

I never before had my fruit and vegetables keep so well as they have since I commenced using this heater in the cellar. It not only serves for ventilating and regulating the temperature, but the air of the whole house will be the purer and pleasanter for a fire occasionally in the cellar, not to mention the additional comfort of knowing one's stores to be safe, even in the coldest weather.

W. D. BOYNTON.

A GOOD MARKET FOR DRIED FRUITS.

While overproduction in almost every branch of industry is complained of not only here but in Europe, dried fruits appear as yet not to be in excess of the demand. The apparatus necessary for evaporating fruits of all kinds is comparatively not expensive; and, with proper management, will pay for itself in a short time. Of course, this, as any other industry, may be overdone, if everybody should rush into it; but to judge from the following remarks of the *London Produce Market Review*, the time seems to be not near at hand:

"There is no country enjoying a fairly temperate climate in which home-grown fruit is so scarce and so dear as in England, while we have heard it said that in some parts of America Peaches are so abundant as to be hardly worth gathering. There can be no question that the demand for dried and preserved fruits is capable of almost indefinite expansion, with larger and more varied supplies, for the supply at present is so inadequate, that some varieties, even of leading descriptions, cannot be had for months at a time, and the trade, indeed, almost comes to a stand-still during the summer, not so much because of the supply of green fruit—for that is always very dear in the larger towns—but simply because there is so little dried fruit to sell."

FRUIT-MERCHANTS NECESSARY.

There has been some wild and foolish talk in certain rural circles about that superfluous being in the world, the middle-man. "I think," says Parker Earl, President of the Mississippi Valley Horticultural Society, "that this talk has never done any good. I am sure it has done much harm. Strike down the agency of the commission merchant and we should have no grand system of commercial fruit-growing. There doubtless are rascals in this trade, as in all others; but this should not lead us to reflect unfairly upon a very large, useful, and honest class of merchants. I have had something to do with fruit commission men for the past quarter of a century, having done business with over one hundred and fifty of them in some eighty cities and twenty States, without having been cheated of a dollar in all that acquaintance. I desire that they shall feel fully identified with the interests of fruit-growers, or with all schemes which tend to the healthful development of so grand an institution as American horticulture."

THE MINNEWASKA BLACKBERRY.

A sample box and clusters of this new variety were received this summer from A. J. Caywood & Son, Marlboro, N. Y. The clusters were large, very full, and remarkably evenly ripened. The berries were of good size and quality, notwithstanding their having ripened during several days of rain. Their entire freedom from a hard core was especially noticed. This in answer to a subscriber from N. Y.

The Flower Garden.

OUR GARDENS.

Written for THE AMERICAN GARDEN.

With swirling wind and nipping mornings,
December 's come,
Piping his keen but friendly warnings
Around my home.

The garden, with its wealth of gladness,
Its lavish cheer,
All pale and drooping turns to sadness,
And shrinks with fear.

The graceful vine that lent us beauty
Bends to the knife:
In ripened seed fulfills its duty,
But yields its life.

The bright-hued borders turn to mourning.
No longer gay;
They 're done with nodding and adorning
From now till May!

So cruel fortune makes us tremble
At touch of ill;
Or bids, may be, the lip dissemble
That quivers still.

But lives and gardens lose and borrow
And glow anew;
We plant to-day, we trust to-morrow.
And still pursue.

Man 's his own fortune—laughs at Nature—
Makes his own cheer;
Compels all climes, and to his stature
Would suit the year.

The sunshine of the coal-mine, glowing,
Keeps off the chill,
And flowers, in spite of all the snowing
Bloom at our will.

Spring, with the Snow-drop and the Crocus,
Lies in my hand;
Nor will they murmur, "Who awoke us?"
When fall they stand.

—DORA H. R. GOODALE.

SEASONABLE HINTS.

Dormant Plants.—Some persons suppose that plants not in full leaf, and not growing vigorously during winter, may be stored away anywhere, like a bundle of summer clothing, and come out all right again in spring. This is a great mistake, for plants are never entirely inactive. As in animals, when sleeping, the circulation of the blood, respiration, and evaporation continue their regular course, so are in plants similar processes constantly at work, requiring certain atmospheric and thermal conditions necessary to their existence. Those who succeed best with their plants, in the garden or house, are generally found to make a careful study of the nature, character, and requirements of their pets, and to treat each class according to its special needs and preferences, with as much discrimination as a loving mother would nurse and care for a delicate and feeble child differently from a strong and sturdy one. In other words, to have success with your flowers you must love them, must have them in your heart.

Storing Bulbs requires similar discrimination; Gladiolus, Dahlias, Cannas, may be kept in any frost-proof cellar, provided it is dry; but Tuberoses, Tigridias, and Colocasias have to be wintered in a warmer place, where they are never exposed to a lower temperature than forty degrees. The great point is to keep them perfectly dry.

COLD PITS AND THEIR MANAGEMENT.

One of the most indispensable structures about the flower garden is a cold pit. In it can be kept a good many plants, which, without one, would have to occupy more valuable space in heated structures, especially these plants used during summer for the deceration of the garden and which do best when kept in a dormant condition during winter, such as Roses, Petunias, Feverfews, Carnations, etc. The labor attending their care is much less when stored in a pit than if kept in a heated greenhouse.

To that large class of readers of THE AMERICAN GARDEN who, although in comfortable circumstances, do not feel disposed to afford labor incident to the care of a greenhouse, cold pits are of great service even in localities where the thermometer reaches zero. Further south, of course, where the temperature is higher, greater benefits can be derived from them, as more tender plants can be kept in them than in northern latitudes.

For large plants of Roses, Carnations, etc., a deep pit is most suitable, and more easily kept warm when sunk into the ground. Let the place for building a pit be selected in some position well sheltered from the north and north-west winds, and if the subsoil be gravelly so much the better, as the water can drain off more freely. If not naturally dry, the spot has to be made so by draining. After the excavation has been made, board up the inside, allowing the back of the pit to be about eighteen inches higher than the front, so that the water can run off freely. A width of six feet is the most suitable for this kind of pit, as then the common 6 x 3 feet sashes will answer, and it may be made any length to suit the requirements.

For Pansies, Daisies, and Forget-me-nots, for blooming Violets and wintering Lettuce, it is only necessary to have a shallow frame about a foot in front and eighteen inches at the back. It is very important to be careful at all times to arrange the frames so that all superfluous water can pass off freely. Water standing any length of time in a pit or frame will soon destroy every plant in it, the roots will decay, and the moist atmosphere causes the soft parts of the plants to damp off and ultimately perish.

Neither hard nor soft wooded plants can endure a close, damp atmosphere without air, light, and warmth; but if the atmosphere is dry it changes the condition—the plants remain in a semi-dormant state, and come out in good shape in the spring.

Plants in pots, kept in a pit, should have good drainage, to prevent the soil from becoming too wet by the retention of water in the pot. On all suitable occasions give all the ventilation possible, and at all times allow the full power of the sun to strike on the glass, guarding at the same time against overheating by judicious ventilation.

It is also necessary to have straw mats and shutters to put on in extreme weather, and during exceptionally cold spells it may be necessary to use straw in addition as a covering. In the Southern States, where the temperature does not fall more than 8° or 10° below freezing, a good many plants will make a slow growth during winter. If regular attention is given to airing, covering, and watering, most plants requiring greenhouse temperature do well in such climates; while farther north the variety which can be kept in pits is more limited. It comprises Tea Roses, Carnations, Feverfews, Ivies, Daphnes, Mimulus, Vincas, Petunias, Pinks, Violets, Pansies, Daisies, Forget-me-nots, Laurestinus, Oleanders; and, if well sheltered, Camellias and Azaleas can be kept in most of the Middle States, and in a good many of the Northern States.

Watering has to be done carefully. It is best attended to during the forenoons of clear days, so that there will be a chance for the extra moisture to pass off before night. Water only when the plants are dry, and when it is done do it thoroughly. As spring approaches and clearer and warmer weather sets in, the plants demand more attention and more water, and upon all occasions give plenty of air, so that, instead of the plants being weak and tender when setting-out time comes, they shall be hardy, and able to endure the change with impunity.

MANSFIELD MILTON.

IPOMŒA NOCTIPHYTON.

Having noticed in THE AMERICAN GARDEN some inquiries about the treatment of *Ipomœa noctiphyton*, my experience with this comparatively new plant may be of interest to some of your readers.

In the spring of 1883 I procured a small plant of this Ipomœa in a three-inch pot. I immediately repotted it in a five-inch pot, using rich, loamy soil, and then placed it in a warm greenhouse in order to have the plant as strong as possible before planting it out. It grew vigorously, and by the first of June was quite large and well branched, the result of a frequent pinching back of the young shoots. It was then planted out in a well-enriched, deep border, and trained upon a large pillar which it soon covered with its bright green foliage, and it continued to flower freely from July until it was brought inside.

About the middle of September the plant was well cut back, taken up carefully, potted in a six-inch pot, and wintered in a warm greenhouse where it was given a temperature of from 55 to 60 degrees. Water was but sparingly given, as my object was to keep the plant in a dormant state; but the foliage was freely syringed, as a preventive against the attacks of the red spider, to which it is unfortunately very subject when grown under glass.

About the middle of April of this year I encouraged it into growth and planted it out about the middle of May; it soon covered an immense space, and since the first of July has flowered profusely. As soon as frost threatened I cut it back, took it up carefully, potted it, and shall treat it precisely as I did the previous winter.

This Ipomœa is one of our most valuable summer-blooming climbing plants, is easily grown, and is of vigorous, rapid growth, soon covering a considerable space with its bright green foliage; and its large, pure white, deliciously scented flowers, opening during the evening only, are produced in the greatest profusion.

The secret of growing it to perfection consists simply in having good, strong, healthy plants at the start, and in giving them a well-enriched, deep soil, with a mulch of coarse littery manure, and copious waterings during periods of drought.

CHAS. E. PARNELL.

SPRING FLOWERING BULBS.

THE SNOW-DROPS.

The pearly white Snow-drop shoots forth from the ground almost as soon as the first clear whistle of the robin and the pure treble notes of the bluebird are heard. It is the leader of the gloriously robed procession of flowers which follow so closely in the footprints of the spring. Their tiny bulbs will grow in any soil, and even in the grass-plot they will push up their tiny lance-like leaves, and the flower will hang its sweet head very often before the snow is all gone. They can be planted in clusters of tens or dozens, in spots in the lawn, but as they increase rapidly, unless replanted every three or four years they will run out and die. Plant the small bulbs at the depth of two inches, and one inch apart. The larger variety of Snow-drop, the Giant, which blooms as early, should be planted three inches in depth, and four inches apart. Without an edging of Snow-drops and Crocuses in the flower garden, or clumps of them in the lawn, one is utterly deprived of the joy of gathering the first flowers of the spring.

THE CROCUS.

The Crocus, clothed in royal purple and kingly gold and lilac and blue, with plain or striped petals, should always be planted with the Snow-drops. They should be set an inch or more apart, and two inches in depth, and the last of October or first week of November is the best season to plant them, but they can be put in later. They need not be disturbed for three years, and then should be replanted in other soil. When the leaves are yellow and all withered, cut them off. New varieties are yearly raised from seeds, and it is a pleasant occupation to plant them in shallow seed-pans, then transplant in the beds, and see what shades of color will be produced, for it is the delight of amateur gardeners to possess something rich and rare raised by their own hands.

a. THE COMMON SNOW-DROP.
b. THE GIANT SNOW-DROP.

THE DAFFODILS.

These are showy bulbs which will flower wherever you plant them, and bloom year after year profusely; they are as double as Poppies and as yellow as Sunflowers, and ask no care at your hands until they become root-clogged. Then in autumn remove to another place, dividing the roots of the *Daffy-down-dilly*, as the children call it.

THE LILY OF THE VALLEY.

This fairest and sweetest of all spring flowers, without which no garden can be complete, asks but little labor from our hands to produce a perfect beauty, and will bloom for a generation, even longer, in the same bed. They prefer a shady locality, where the soil is rich and moist, are perfectly hardy, and require no protection in the coldest climates. Plant dozens of bulbs this season, and early in the spring you can gather quantities of their deliciously fragrant flowers.

THE NARCISSUS.

There are numerous varieties of this most lovely flower, and the Daffodil and Jonquil belong to the same family. The *Polyanthus*

THE SPRING SNOW-FLAKE.

Narcissus, of various kinds, are the prettiest of the species. These bulbs blossom in clusters of six to twelve flowers on a single stem, and are of every shade, from purest white to darkest orange. The cup of the white varieties is yellow, and of the yellow it is of the darkest orange hue. *Poet's Narcissus* is the most beautiful of its kind, having pure white petals, with a crimped white cup tinged with crimson and a green center.

The *Double Narcissus* is also most desirable for its delicious fragrance and its pure white flowers. They need the same treatment as Hyacinth, and should be planted four inches deep and four inches apart.

The *Anemones*, *Ranunculus*, *Scillas*, *Irises*, *Ixias*, and *Sparaxis* are all required when a perfect bed of spring flowering bulbs is desired. They need similar treatment as the bulbs named, and may be planted among them. *Ranunculus* and *Anemones*, however, are tender bulbs which will not bear a northern winter, but must be kept in the house until the ground does not freeze. In milder climates they can be planted in November or December. Their colors are very brilliant, and they will make charming additions to any garden of flowers.

DAISY EYEBRIGHT.

THE AQUILEGIA.

Almost every one who has lived in the country, and gone hunting wild flowers, must know our native *Aquilegia Canadensis*, but quite likely under another name,—that of wild Honeysuckle. It is given this name because the spurs of the peculiarly shaped flower contain a drop of sweetness, like that found in Clover.

Our native species—or rather the one most frequently met with—is yellow and red. For a long time it was neglected, like many other meritorious native plants. When it was taken in hand it showed a willingness to change its colors, and careful crossings of different varieties and species have given us some very fine new ones. We have them in white, scarlet, rich olive, violet, and rose, single and double, and many varieties combine these colors very showily.

The foliage of the Aquilegia is very pretty, being borne in dense masses, mostly near the ground, from among which the flower-stalks are thrown up. It is a very hardy herbaceous plant, a most profuse bloomer, and is in bloom for a long time. Most varieties grow to an average height of about three feet. It is a fine plant to use in the background among borders of other herbaceous plants. It can be grown very easily from seed, which is freely produced. Sow in the open ground, at the same time you sow annuals, keep the soil about the plants mellow and clean, and you will have strong, healthy plants by fall, from which you may expect a fine show of flowers the next season.

EBEN E. REXFORD.

A THANKSGIVING BOUQUET.

We have just, this 22d of November, cut a pretty bunch of garden flowers, which in

CROCUS VERSICOLOR.

water will easily keep fresh till Thanksgiving day. Not Chrysanthemums which, of course, are still in full bloom, but from annuals sown in summer, and we are not sure that these belated blossoms, just freeing themselves from the white frost of the previous night, do not afford as much pleasure as their brilliant sisters of the summer garden. Among those in most perfect condition were Mignonette, *Phlox Drummondii*, *Phacelia tanacetifolia*, *Centranthus*, or Red Valerian, Virginian Stock (*Malcomia maritima*), Godetias, Gilias, Clarkias, Swan River Daisy (*Brachycome iberidifolia*), Argemone, *Bartonia aurea*, *Oxyura chrysanthemoides*, an extremely pretty annual, with Chrysanthemum-like, yellow flowers, tipped with white.

The Window Garden

AND GREENHOUSE.

WINDOW GARDENING FOR DECEMBER.

WATERING PLANTS.

Observe directions given last month. Soft water is better than hard water; but, no matter what kind you have, never allow your plants to suffer of thirst. Water should be of about the same temperature as the atmosphere of the room in which your plants are growing. In watering plants in pots, lower the watering-pot, so that the spout touches or comes near to the rim of the pots, then pour in gently and fill up to the brim. Don't let it overflow. If you have saucers underneath the pots, don't keep them full of water with the idea that you are doing the plants a kindness, as the opposite would be the case. In watering, do not pour the water into the middle of the pot, as you so often find is done, but toward the outside—that is, around just inside the rims of the pots. Watering right in the middle of the pot and at the base of the stem of the plant, is apt to make a hole in the soil there, and to injure the roots.

Observe plants under natural conditions from Oaks to Cabbages, and you will find that, instead of arising from basin-like hollows or having water-holes at the base of their stems, they emerge from gentle mounds which, instead of retaining the water around the stems, lead it off to where the fibrous roots abound and where it is most required.

Geraniums and Fuchsias are "cast-iron" plants, and will stand much rough usage with apparent impunity; and Callas don't seem to mind how they are watered, providing they get a copious supply. But if you wish a striking example of the evil of water-holes around their base, try it with a sash of Lettuces in winter.

CLEANING PLANTS.

Never allow dead or moldy leaves or wood to rest on or about your plants. If decaying, moldy leaves or flowers fall upon fresh leaves and are allowed to remain there, the fresh leaves will rot also. If the leaves of Callas, Dracænas, Ficuses, and other plants with large, smooth foliage, get dusty, wipe them over with a sponge and soapy water; but, unless they are very bad, I should disadvise your wiping the leaves of Coleuses and other soft, woolly leaves. Wage war against insects, and spare them not. A little soot mixed in the water you give the plants destroys or dispels earth-worms—mean things in pots.

WINTER FLOWERS.

The following are some of the flowers that I had in quantity last December:

Abutilons, Allamanda Schottii, double Sweet Alyssum, Amaryllis aulica, Begonias, Bouvardias, Callas, Carnations, Cestrum, Paris Daisies, Euphorbia splendens, Geraniums, Heliotropes, Yellow and Catolonian Jessamines, Meteor Marigolds, some Orchids, Mignonette, Poinsettias, Roses, Tropæolums, Violets, Chinese Primroses, Pansies, Drummond Phlox, Stevias, Fuchsia speciosa, and several varieties raised from cuttings six months before.

SOIL.

Have some soil under cover, and where it cannot freeze, for use whenever you want it, in winter or early spring. Have sod-loam in one heap, well-rotted manure that is free and not pasty, clean pit or river sand, and, if you can get it, some rich wood soil or leaf mold in other heaps, or in barrels or boxes. By having each kind separate, when you come to repot your plants, you can prepare composts to suit yourself for your several varieties of plants.

I believe there is a vast deal of twaddling nonsense, or, in other words, humbug, in the "best soil" mixtures recommended for the several classes of plants. European horticultural literature is as precise in the constituents of its composts or soils for the different classes of plants as doctors are with drugs in medical prescriptions. Visit our vast floricultural emporiums, where plants, in millionary variety, are handled, and you will find no "best" soil composts to trammel the dispatch of business. It is simply a question of plain, rich, richer, richest, according to the nature of the plants. Such a thing as one-fourth each of peat, loam, leaf mold, and sharp sand, or any other rigid rule, is never entertained. But porous and well-drained soils are absolutely necessary for the welfare of plants growing in pots.

THE BERMUDA EASTER LILY.

MANURE.

I use well-rotted farm-yard manure, and take in a fair supply before winter sets in; but the bulk of my potting manure I bring in in a frozen state. Rich manure is very full of worms, and I don't want them in my potting soil if I can help it. As frost advances into soil or manure, the worms get down a little deeper, and this is why—to get rid of the worms—I prefer housing the manure when it is frozen. Of cow manure, such as the dry cakes I find in the summer pastures, I gather a lot every year, let it freeze, then bring it into the bins in the warm sheds. Cow manure seems to contain more insect vermin than horse manure.

LIQUID MANURE.

Guano, or sheep, or hen-house manure is often used in water for liquid manuring. Sometimes an old bag is partly filled with farm-yard manure, or put into a barrel of water, so that the manurial substance may leach through into the water. After the barrel has been emptied of water once or twice, the manure in the bag is thrown out and fresh manure introduced, and the sack replaced in the barrel as before. This is how I make it in winter. During the summer, I have one or more barrels sunk into the ground, so that their brims are an inch or two beneath the ground level, and into the side of the manure piles. Every rain fills these barrels full of the richest material, and the drainage from the heaps settles into them all the time.

WM. FALCONER.

THE BERMUDA EASTER LILY.

(Lilium Harrisii.)

Our illustration represents a specimen of this magnificent Lily, exhibited last spring at a meeting of the New-York Horticultural Society. This variety of *Lilium longiflorum*, brought here from the Bermuda Islands, has elicited considerable discussion as to its being sufficiently distinct to justify its introduction as a new variety. Having grown both kinds side by side in the open ground, we confess our inability to detect any material difference under these conditions. Nevertheless, for foreing, those who have had most extensive experience consider the true Bermuda Lily far superior to the common kind. It not only can be forced earlier into bloom, so that flowers may be obtained by Christmas, but under proper treatment it produces a greater number of flowers, and of larger size. Such superb specimens of Bermuda Easter Lilies as may be seen at almost any winter meeting of the New-York Horticultural Society have certainly never been shown of the common *L. longiflorum*.

DUTCH BULBS.

If not already planted, there is still time to get a few bulbs of Hyacinths, Roman Hyacinths, Tulips, Jonquils, and Polyanthus Narcissus; pot them, putting, according to size, one or several bulbs into a five-inch pot. Then water as you would a newly potted plant of any kind. Set the pots out-of-doors and close together, and cover them over three or four inches deep with sand, ashes, or earth. Before hard frost sets in, remove the pots to the cellar or other cool place, but away from frost, and cover over as before. A few at a time may be brought up to the window of a warm room, and thus a succession of flowers be maintained.

AMARYLLIS.

Among winter-flowering bulbs, the Amaryllis, in its various species and innumerable hybrids, the general character of which latter is shown in our illustration, takes a prominent place. In fact, it would be difficult to imagine a more beautiful and showy ornament to the window-garden than a well-grown Amaryllis in bloom, and yet it is comparatively seldom seen by amateurs.

There is not the least difficulty in growing it in the house, if its necessary wants, which are easily provided for, are complied with. The great point to observe in its cultivation is that the bulbs must have a season of rest after blooming, without being dried up altogether. This state is best produced by giving gradually less water until the plants have ceased growing, when only enough should be furnished to prevent their shriveling up.

The bulbs should during their season of rest remain in the pots, in some dry place. As the roots remain on the bulbs all the time, taking them out of the pots to dry, as is done with Hyacinths and Tulips, is a most injurious proceeding, which almost always results in non-flowering. A soil composed of well-decayed leaf-mold and sandy loam is best for Amaryllis, but it is not necessary to repot them every year.

When wanted for winter flowering, the pots are to be brought to a warmer place, near the light, and gradually watered more frequently. The leaves, and with them generally the flower-stalks, will soon appear, when a full supply of water has to be given. If wanted for summer flowering outdoors, they should be kept dormant during winter, transferred to the open ground in spring, and taken up again in autumn.

HYBRID AMARYLLIS.

A WINTER-HOUSE FOR PLANTS.

Several years ago I planned and built a house or pit for keeping dormant plants. My greenhouse was small, and as I wanted a succession of flowers in winter and spring, the following plan was adopted, as being easily managed, with little expense besides the first cost of what I call my "winter-house."

It was built by digging a pit into the face of a gentle slope, so as to secure drainage, nine feet wide and twenty-five feet in length. At the time it was made I was so doubtful of the success of the experiment, that I used two-inch chestnut plank for lining, fearing that I might have to pull it down in a year or two if it did not work. But now I am so well pleased with it that when the planks give out I intend to replace them with a brick wall eight inches in thickness. The soil thrown out of the pit was banked up on the north side of the excavation seven feet high from the floor and supported by the plank wall. The south side was four feet high. Lengthwise of the pit, three feet from the north side, a row of posts was set, which support a plank floor over which the earth was thrown one foot thick. This gives standing room and a place for shelves and benches under it. The earth was sloped up to and over the top, and around the ends and front; this was turfed over, and the open space on the south side covered with three by six feet sashes, such as are used for hot-beds. The entrance to the pit is on the east end through double doors.

The temperature of this pit with the glass on in sunny winter days is as high as 60°, and when the mercury falls to 20° below zero, it will not freeze enough to do harm to anything I have kept in it. During a few of the coldest nights in midwinter, after short, sunless days, I have covered the most tender plants with papers, or kept a kerosene stove or a lantern burning for a few hours. No fire is needed, shutters laid over the glass at night and taken off in the morning to let the sunlight in will be protection enough. In the summer the sashes are taken off and the rafters and the whole interior left exposed to sun and air.

In the fall I bring into this pit Callas, Roses, and Carnations, all pot-grown through the summer; plunge them in the soil on the benches, water once, and give no further care till I bring them into the hot-house for forcing. The pit being below the ground and well protected on all sides by the earth about it, is much warmer than one would suppose.

On the shelf above the bench are "flats," in which the earth is four inches deep; these contain thrifty seedlings of Verbenas and Pansies. These remain partly shaded, cool, and do not make any growth to speak of. Insects find it too cool for comfort, and do not trouble the plants. The green fly will maintain a bare existence, but can be easily kept in check.

Under the bench I keep such roots and plants in pots as require shade. In the open space between the bench and the south side of the pit is room for the large lawn plants, that often cumber the cellar and maintain a precarious existence in a furnace-heated house.

Geraniums cut back and potted, or placed directly in the dirt floor, live over to make large, nice plants for another year. The plants need very little water or change of air, except such as comes from opening the doors in going in and out. Roses keep nicely here, can be tended without trouble, and will make some new growth as the long spring days come near. In addition to its value for storing plants, I have found that Celery and many other vegetables will here keep very nicely. Active plants set in boxes in the fall will live for early setting in the spring, also Cabbages and similar plants.

The only secret of success with such a structure is to let all the sunlight in, by taking off the shutters every day when it does not snow, from nine A. M. to four P. M. In stormy weather, and when a storm threatens, the shutters should always be put on, and kept on. After every snowfall the snow should be cleared off to let in the sun. Sometimes in very stormy weather I clean alternate ends of the pit, and let the sun in on one end only at a time; this gives sufficient light for the time.

If it is not feasible to plan such a pit deep enough under ground, it is of the greatest importance that it is be well protected by banking soil against the sides all around. It may also be so arranged that it can be entered from some building.

Considering all points, I have never attempted anything in the garden which, for the outlay, gave me so much satisfaction as this "winter-house."

W. H. BULL.

A NEGLECTED HOUSE-PLANT.

Common as it is, we do not know a prettier and more graceful herbaceous plant than the Bleeding Heart *(Dicentra spectabilis)*, especially for house culture. A small clump may be taken up at any time before the ground is frozen, transplanted in rich soil in a sufficiently large pot, and treated similar to Dutch Bulbs, with which it harmonizes well.

Lawn and Landscape.

GOOD LAWN TREES.

Spring Grove Cemetery, near Cincinnati, widely known as one of the most judiciously arranged and most tastefully planted cemeteries in the country, offers rare opportunities for studying trees. Mr. Strauch, who won fame and honor with the creation of this beautiful specimen of landscape art, was both a lover and excellent judge of trees, and brought here together specimens of most of our native as well as of the best foreign species, which may be seen of many different ages and in various combinations.

At a recent visit I was particularly attracted by a plot of about an acre in extent, on which were planted five kinds of our most beautiful lawn trees, the several specimens of each being so arranged as to present their special characteristics to the best advantage. They had probably been planted about eighteen years as they had reached a diameter of six or seven inches, three feet from the lawn.

THE SCARLET OAK.

This was undoubtedly the most beautiful tree. Its clean stem, its slender limbs, and still more slender sprays with beautiful, glossy, dark-green leaves, made me wonder why it is not oftener planted. It was Dr. Warder's favorite tree, and I once heard him recommend the close planting of it in large groups, to be cut back once in two years. Such a mass would be beautiful all summer, and as the Indian summer days drew near their close it would be glorious in its scarlet hue.

THE SUGAR MAPLE

with its dark foliage and neat, regular outline, came next the Scarlet Oak. It is everywhere the American favorite tree, and is too well known to need description or encomium.

THE SYCAMORE MAPLE.

Though little known and seldom planted, this combines the beautiful features of two of our best trees, the Sycamore and the Maple. Its large, sharp-cut leaves on long petioles give it a most distinct appearance. The specimens were hardly old enough to show their greatest beauty, the new growth being so rank; but the tone of the tree is warmer than that of the Sugar Maple, and produced a pleasant contrast.

THE LIQUIDAMBAR, OR SWEET GUM.

This tree was a favorite with A. J. Downing, and Frank Scott laments the perversity of taste that fails to make it more generally planted. In appearance (or "touch," as the artists say) it is different from all other trees. Its leaves, like irregular five-pointed stars, hang perpendicular, and remind one of the *Ricinus*, or Castor-oil Bean. When young, this tree grows in a natural pyramidal form; but, as it gets older, its form is more like the Maple's, with which it harmonizes well in planting. In spring, its opening leaves emit an amber-like fragrance; and during October its foliage becomes clothed in gorgeous coloring, similar to a crimson Tulip. Its secondary branches have a peculiar bark formation, singular and striking. The trunk exudes a transparent gum, and at the South the leaves are sometimes covered with a sweet, glutinous excretion. The extreme heat and drought of southern Ohio this summer had led to this exudation from the leaves, which I have never seen upon this tree at the North before. Entire leaves, or parts of leaves, had adhered, causing decay and discoloration, sadly marring the foliage.

THE EUROPEAN LINDEN.

The drought had injured these trees somewhat, so that they were not looking their best. This tree, however, reaches its highest beauty in midsummer, and it is hardly fair to criticise its appearance in October.

This grove of trees lacked but one factor to give it perfection, especially toward the close of autumn. There were no Scarlet Maples.

THE SCARLET MAPLE.

Specimens of this, the most beautiful autumn tree, were scarce even in other parts of the grounds; yet I noticed a tree which must be an object of rare beauty when it puts on its autumnal dress. It was rather a dwarf specimen, not more than twenty feet high, while its "drip" was fully thirty feet in diameter. Its branches rested upon the ground, which was sloping and bordered with a close background of Oaks. Many beautiful specimens of Oaks, both Red and Overcup, as well as of other trees, are to be seen at Spring Grove, but none seemed to me to surpass the above-mentioned in beauty and perfection of form.

L. B. PIERCE.

CONSTRUCTION OF ROADS AND WALKS.

Very much of personal comfort and pleasure in suburban localities depends upon good roads. A smooth, firm, dry road is one of the greatest conveniences and enjoyments, while rough and soft muddy roads are among drawbacks and annoyances anywhere. Bad roads form the greatest obstacles to progress and permanent improvements in all neighborhoods which are blasted with their existence; they have a demoralizing effect upon the inhabitants, and are a sure sign of poverty or mismanagement, or both.

The main point involved in maintaining a good road is to keep it dry. Water is the worst enemy to good roads. A clay road is a good road so long as it is perfectly dry. In order, then, to keep a road dry, it is necessary to keep it somewhat higher than the surface, so that water will leave it quickly. Therefore, the greater part of a walk should be laid on the surface of the ground.

Merely for a foot-walk no great depth of material is needed. Deep excavations filled up with stones and finished level with, or, as more frequently seen, a little lower than the ground, may be serviceable for wagon-courses, but a comfortable and dry foot-path in all weathers is not thus obtained.

No good road ever was, or ever can be, made of gravel, and those who have the best experience in road-making never use gravel, unless in some cases to fill up interstices in the surface, and then half an inch or so is all that is necessary.

The details of road-making may be briefly described as follows: After locating the road and marking out its course, the sides should be brought to the proper grade, and finished by laying a sod about a foot in width, to keep the edge perfect and as a guide to further operations. The road-bed is then formed by excavating and removing the soil to a depth of six inches below the top of the sod at the sides, sloping it up to the center at the rate of two inches to the yard. Thus, a road fourteen feet wide would be five inches higher in the center than at the sides. This road-bed should be made perfectly smooth by rolling, so as to insure a uniform surface upon which the material of the road is to be placed.

The best stone for road-making is tough granite. Hard, brittle stone is more readily reduced by pressure, but for the bottom layer this is no defect. About four inches of roughly broken stones are first spread over the road-bed, then a roller is passed over them to press them somewhat in place and to regulate the surface for the next layer, which should consist of broken stone, broken so that each piece could pass through an inch and a half ring. This layer will fill about two inches, and after being leveled by rolling, a sprinkling of small gravel-stones not larger than marbles is then spread evenly over the surface and the roller again applied to compress and form a somewhat smooth surface for the application of a layer of gravel not over one inch in thickness. It is all-important that this layer of gravel should not exceed one inch in thickness, and large gravels should not be allowed in it. A gravel containing reddish-colored clay is the best.

The gravel is merely for the purpose of filling up spaces between the stones on the surface, and should be carefully and evenly distributed, and then rolled until the surface becomes homogeneous, firm, and close. Washed gravel or sandy gravel should not be used where a clayey gravel can be procured, and in no case should gravel be applied in thicker layers than has already been stated.

No detail in road-making is more important than the surface finish. The stones or gravels on the immediate surface of the road should be so small that a wagon-wheel or the foot of a horse will simply press it down; if large enough to be pressed on one end, the other end will be slightly raised, and will soon be found rolling on the top; hence, every stone near the surface should be smaller than the pressing point; then it is not easily disarranged.

The road, when finished, should be filled up at the sides, so as to be nearly level with the top of the sod at the sides. This will allow the water to pass rapidly from the road to the sides. A slight upward slope of the sod will also be favorable, but, above all things, the road should appear to be full. Nothing looks so bad as deep edgings, looking as if they had been cut by a plow.—*William Saunders, before the District of Columbia Horticultural Society.*

ORNAMENTAL HEDGES.

Thomas Meehan recommends for Evergreen hedges, for ornamental boundaries, Norway Spruce, Scotch Pine, Hemlock, and Chinese and American Arbor Vitæ; and for dwarf dividing lines, the golden Retinospora and the dwarf forms of Arbor Vitæ. Almost any thick-growing shrubs make handsome deciduous hedges.

Foreign Gardening.

ORCHIDS IN PARA.

In a former letter when describing the plants in Senhor Olinda's garden we purposely omitted other than a mere reference to Orchids. Of these there are about five thousand plants in about four hundred and fifty species, all under name and number.

The collection is not confined to Brazilian Orchids, though in number of plants (but not of species) they occupy the prominent place. For instance, of the beautiful *Cattleya El Dorado* there are at least three hundred plants, hardly any two of which are alike in bloom. We see Orchids from all parts of the world, and many of the East Indian species, such as Vandas, Saccolabiums, Calanthes, Phajus, and Aerides, thrive wonderfully. Phalænopsos, hung in baskets under the trees, are in vigorous health, requiring little care, and that only to see that, if no rain comes, they do not dry up.

Entering the gate, we are at once asked to look at the Orchids in the house, but apologetically, because, as the Senhor says, "it is not the season for Orchids." The greater portion bloom from December to May, but in a large collection there must always be something of interest.

We enter the hall, which is lighted by a large window at the end, and the whole of the alcove so made is arranged as a place to show Orchids in bloom. Large Ferns and Dracontiums, growing on trunks of trees, furnish the green background, and all around the Orchids are hung, most being grown on blocks.

At the time of our visit (August) the prevailing color was yellow, from the many species of Oncidium. We noticed especially *Oncidiums Marshallianum, Juncifolium, Sarcodes, Pubes,* and the charming little *Iridifolium,* with leaves like an outspread fan, and more flowers than plant. *Oncidium Sprucei,* from the upper Rio Negro, is like a gigantic *Juncifolium,* the flowers golden yellow, in immense panicles, and the foliage rush-like, drooping, and five feet in length. It is a very rare and beautiful species. Of *Oncidium papilio,* and the variety *major,* there were fine plants, which are seldom out of bloom, and the large butterfly-like flowers, which seem poised among some Ferns, were very attractive. Large plants of the delicate pink *Oncidium ornithorynchum,* in hanging baskets, filled the hall with perfume, and the lustrous copper-colored flowers of *O. crispum* showed to great advantage.

Plants of *Epidendrum bicornutum,* the free blooming Amazonian variety, wore a mass of pure white flowers, deliciously fragrant, and as fine as *Phalaenopsis grandiflora,* which it much resembles. Some strange Catasetums of the Monacanthus type, and a grotesque Coryanthes were very curious, and *Galeandra Devoniana* and *nivea,* the latter a little gem of a plant, with shell-like, delicate, rosy white flowers, and glaucous foliage; the former, delightfully fragrant, and a large plant of a brilliant *Cattleya superba* completed the group in the hall.

Altogether, there were perhaps forty plants in bloom, and but few species, yet the effect was very good. We can only imagine what it must be when, as was the case from December to February last, the whole house was filled with *Cattleyas El Dorado, luteola,* and *superba*—some two hundred plants in bloom at once, from one to four spikes, of from two to five flowers on each—every shade from pure white to deep purple, varied by the soft yellow of *Cattleya luteola.*

Going into the parlor, we saw on the table a beautiful specimen of *Oncidium longipes.* This species has loose panicles of light-yellow flowers, not very brilliant, but very graceful and elegant. Close by was a well-bloomed plant of *Lycaste aromatica,* diffusing its rich Cinnamon fragrance, and in the dining-room were two plants of *Oncidium sphacelatum,* with spikes five foot high, just opening their flowers. Between the windows hung a giant Orchid, probably a new species of Catasetum. The plant, from base of pseudo-bulbs to tips of leaves, measures five feet; the pseudo-bulbs are immense; very thick, and of a silvery gray color; the flower spikes carried about fifty flowers each, very large, richly colored, black, purple, yellow, green and white, which filled the air with the fragrance of *Narcissus poeticus.* This species, unlike most Catasetums, remains long in bloom, the flowers lasting in perfection about ten days. It also is fragrant all the time.

E. S. RAND.

(To be continued.)

A CITY OF FLOWERS.

Kingston, the capital of the island of Jamaica, is a city of flowers. It is situated on a gentle slope of the Blue Mountains, close to the water of a delightful bay, and is one of the cheapest places in which to live, I believe, says U. D. Wood, in the *Tribune and Farmer,* that the world contains. Everything grows spontaneously and in abundance. I have seen large baskets, containing at least two bushels of Oranges, Lemons, Pine-apples, Cocoa-nuts, Custard-apples, and other fruits, never seen North, after being carried on the head from five to fifteen miles, and delivered at daylight for ten cents.

The pride of Kingston is in its splendid houses and magnificent gardens. A description of one will answer for the whole. The houses are built on the cover-all-the-ground-you-can-get principle, and every residence is surrounded by a garden,—a block or half block fenced in with a brick wall, or walled in with a board fence, about eight feet high; the ground inclosed is kept in a state of cultivation, planted with choice flowers and shrubbery, and all exquisitely arranged.

The houses are two-story, and the rooms generally thirty feet square, with ceilings twenty feet high; flushings of mahogany, laurel, and ebony. The houses are not sided as in northern climates, but have broad double verandas and Venetian blinds, so that the whole side of the house can be thrown open to admit air in the heat of the day. But the greatest curiosity to a Northern man are the beds; they stand in the center of the room, are six feet high and eight feet square, without head or foot boards; the legs are of polished mahogany. I was told they were made so to prevent snakes and other reptiles from crawling up. A short ladder stands against the wall to climb into bed with.

But, after all, the great attraction of Kingston is in its numerous and magnificent gardens; it has long borne the name of the Flower Garden of the South, and this name it is, without doubt, justly entitled to.

At the North a garden is a place for raising Potatoes, Cabbage, Onions, and other useful vegetables; but here it is a different thing altogether. It is an inclosure, varying in size according to the man's "pile," with a glass house near one corner for such delicate plants as are not partial to the weather to live in, a great variety of flowers and curious-smelling weeds and strange bushes. What ground is vacant is laid off into fancy paths and walks.

Then there are thick bunches of Grape-vines running over arbors loaded with hanging clusters of Grapes, and Fig-trees more than thirty feet high loaded with ripening fruit. Then there are profusions of Plums, Apricots, Pears, Peaches, Oranges, Nectarines, etc., all delicious.

There are the Cedar of Lebanon, Magnolia, Olive, Laurel, Hibiscus, Gardenia, Oleander, and Palmetto, locked in each other's embrace, and gayly holding blossoms in their hands; and creeping up among them are the Cactus, the Jasmine, the Passion Vine, the Honeysuckle, the Bignonia, the Lantana, and the "Plumbage," unfolding their tinted and sweet-scented buds to entice, while they stealthily entwine their long tendrils around the arms and bodies of the flowering trees, binding them into arbors that exclude the rays of the sun and the gaze of the world, where a poetic young man and a romantic young woman might repose on a green, mossy bank, and forgetting the world, fancy they were in the Garden of Eden.

MARKET-GARDENS OF HOLLAND.

In the neighborhood of Amsterdam, Holland, writes a correspondent of the *London Garden,* there are over one hundred and fifty market-gardens, in the greater portion of which such kinds of vegetables as it is usual to forward under glass are grown, while some are devoted exclusively to Beans, Cabbages, and other things commonly cultivated as field crops. The Dutch market-gardeners are a laborious, painstaking class, but, seldom journeying far from home, are wedded to old ways, some of their appliances being of a very primitive description.

Thus, for instance, the sashes of their frames are glazed with small squares bedded in lead, just like the old-fashioned casement windows, a fact which seems most strange, seeing that that style of glazing garden frames has for many years been quite obsolete in European gardens generally. The frames themselves are of a rough description, being formed of thick boards, being generally some eighty feet long and divided into compartments at need.

Where ground is so valuable, space is naturally economized as much as possible, there being but about one and a half feet between each row of frames. Each market-garden is surrounded by hedges, and divided into two or several portions by screens or transverse hedges. In a level country like Holland, where there are but few natural breaks to the fury of the winds, some such kind of artificial protection is almost indispensable, and especially where a large number of glass frames are employed. One or more of these compartments are occupied by the dwelling-house, sheds, cellars for vegetables, and frames; the remainder are devoted to the various kinds of crops which may be made a specialty of.

Rural Life.

TO A LITTLE SUMMER VISITOR.

Written for THE AMERICAN GARDEN.

Amid spring's fair and tender green,
On branch and swinging spray,
The little birds made melody,
And cheered my heart all day.

But when the summer Roses bloomed,
And fragrant was the air,
One "birdie" came, whose dainty note
I deemed of all most rare.

Each morn I listened for his song,
As swift the weeks flew by,
And dearer to my heart he grew
As drew the autumn nigh.

But now November winds are drear,
And frosty is the air;
I miss the bird-song from the trees,
The swinging boughs are bare.

I miss my "birdie's" dainty note,
Our Highland home to cheer,
Yet hope assures its sweet return,
Beyond the winter drear.

M. L. B.

HIGHLAND PARK.

BUILDING AN ICE-HOUSE.

A country home without an ice-house lacks one of the principal means for comfort, and economy as well, during the summer months. Those who have never owned and managed such a structure generally look at it as something necessarily combined with considerable expense and labor. Yet this is not the case, as an ice-house sufficient for the needs of a large family can be built with but little cost. The following plan, given in the *American Agriculturist*, will probably meet the wants of many of our readers:

The locality selected was one affording facilities for drainage, was well shaded by trees, and conveniently near the house. The surface being sandy was leveled, and 4 x 6 inch sills, fourteen feet long, were laid down and halved together at the corners. The plates of the same length, of 2 x 4 inch stuff, were put together in the same manner. Studs 2 x 4 and thirteen feet long were mortised into the sills and spiked to the plates every eighteen inches. The roof, a "square pitch," is covered with ten-inch boards, two inches apart, and other boards of the same width nailed on as battens. Hemlock boards, nailed horizontally on both sides of the studs, cover the sides and ends, the four-inch space between the outer and inner siding being filled with sawdust or finely cut straw.

There is a door at the ground level, and another just above, both being practically double by means of horizontal boards, placed on the inside as the house is filled. The roof projects over the sides about a foot, and the spaces between that and the plates are left open to afford ventilation. A layer of sawdust, four inches or more thick, was laid upon the ground, and the blocks of ice stacked upon it as closely as possible. The top of the ice is covered with a layer of marsh hay, about two feet thick. This house, if filled up to the roof, would hold about sixty tons. When half filled, there has been a considerable quantity of ice left over each year, though it has been used very freely.

Exhibitions & Societies.

NEW-YORK HORTICULTURAL SOCIETY.

The "Chrysanthemum Show," held on the 5th and 6th of last month, proved a greater success even than that of last year. The untiring efforts of the exemplary secretary, J. Y. Murkland, were to be seen everywhere; they were well rewarded, and deserve high credit. The entire arrangement was tasteful and appropriate, every available space being filled with plants and flowers, while crowds of appreciative visitors filled the hall from the moment the doors were opened till their closing.

Messrs. Hallock & Thorpe reaped, of course, the lion's share of the premiums, and deservedly so; for the skill, labor, and expense required in the production of their exhibits must have been something extraordinary. The magnificence of their exhibits was certainly never equaled in this city. They had in all between three and four hundred named varieties of Chrysanthemums. The next largest professional exhibitors were W. C. Wilson and Peter Henderson.

A most pleasing feature of this exhibition consisted in the active interest taken by amateurs. John Farrell, gardener to Mr. William Barr, Geo. Lucas, Geo. Mathews, Chas. E. Parnell, and others made highly creditable exhibits. The specimen standards of John Farrell were models of perfect form and good cultivation. To see these alone would have been worth a good journey. They averaged about six feet in height, and were certainly not less beautiful and attractive than standard Roses. The prize collection comprised: *Grandiflorum, M. Planchenau, Striata perfecta, Bend Or, Lord Beaconsfield*, and *Fantaisie*. The best single specimen standard, *Elaine*, stood seven feet high, with a crown four feet in diameter, resembling a huge bunch of Daisies; but a better white in the same collection was Melanie.

It would far exceed the space at our command to describe, in outline even, all the fine exhibits. We must, therefore, confine ourselves to the naming only of the varieties composing the prize collections of cut flowers, which may serve as a guide to those intending to make a selection.

The best twelve new varieties of all kinds from Hallock & Thorpe comprised *Mad. Deveille, Julius Scharff, La pluie d'or, Mr. W. Barr, M. Moynet, Earl of Beaconsfield, Pres. Lavalée, Rosea superba, L'incomparable, Mrs. S. A. Nutt, Mrs. R. Pratt, Blanche neige.*

The best amateur collection of cut flowers came from Dr. Walcott, of Cambridge, Mass., and consisted of the following: *Mrs. Forsyth, Golden Queen, Nil desperandum, Prince Alfred, Crimson King, Mrs. Sharpe, Princess Teck, Abbé Passaglia, Mrs. Gladstone, Le Grand, Guernsey nugget, Lord Wolseley.*

AMERICAN INSTITUTE CHRYSANTHEMUM SHOW.

To describe this grand exhibition, held at the Institute Hall from November 12th to 15th, would necessitate almost a repetition of the foregoing, as the principal exhibitors were the same, and the plants and flowers of equal excellence and beauty. But as this fine, spacious hall, with its many conveniences and appointments, affords better means for display, the exhibits appeared perhaps to better advantage. Hallock & Thorpe, W. C. Wilson, and Siebrecht & Wadley were the largest exhibitors. Prominent in the amateur division were Geo. Mathews, C. M. Allen, Patrick Conroy, and N. Hallock.

Thousands of visitors were crowding around the tables and tastefully arranged groups, and to judge by the appreciative remarks of many, the interest in Chrysanthemums is not yet diminishing. In fact, comparatively few are aware of their possibilities; but these exhibitions exert a most healthful and refining influence upon our people in developing and educating a taste for flowers and their culture.

NEW-YORK FARMERS' CLUB.

This association, which for a quarter of a century has exerted more influence in developing progressive agriculture than any similar institution in our country, is about to be reorganized. Most of the older members who in former years have contributed to the usefulness and fame of the club, as well as a large number of prominent younger farmers and horticulturists, have taken an active interest in this reorganization, making its success already assured. The meetings will be held at 1.30 P. M. on the second and fourth Tuesdays of each month, at the rooms of the American Institute, Cooper Union. All ladies and gentlemen interested in agriculture or horticulture are invited to attend.

MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.

The sixth annual meeting of the above-named society will be held in the city of New Orleans, commencing January 14, 1885, and continuing four days.

It is scarcely necessary to say more than this to arouse the enthusiasm of horticulturists everywhere, for it is already understood that this meeting is to be held during the World's Industrial and Cotton Centennial Exposition, and in connection with the greatest display of horticultural products ever made.

No horticulturist can afford to miss this meeting. A programme worthy of the occasion will soon be published. Liberal railroad rates are offered, and already special excursions, both by boat and rail, are being organized. Premium lists of the Horticultural Department of the Exposition will be furnished on application to W. H. Ragan, Secretary, Greencastle, Ind.

MICHIGAN HORTICULTURAL SOCIETY.

The annual meeting of this society will occur in Ann Arbor, December 1st, 2d, and 3d. Reduced rates on all Michigan railroads. A full and interesting programme is announced, a large attendance is expected, and all will be hospitably entertained. All those intending to be present should notify the secretary, *Mr. Charles W. Garfield, Grand Rapids, Mich.*, that he may mail them railroad certificates. This will be an admirable time to visit the State University, and Ann Arbor horticulturists unite in a most cordial invitation to every member of the State and branch societies to attend. State and district societies outside of Michigan are invited to send delegates.

OUR BOOK TABLE.

The Jersey World, *Indianapolis, Ind.*, presents itself among our exchanges. As its name indicates, its field is "the Jersey World," and any one interested in this peerless breed of cattle can hardly do without this excellent weekly publication. It is very neat in appearance, and edited with remarkable care and mastership of the subject. A series of articles on the different kinds of cheeses of the world, and the modes of their manufacture, from the pen of *Dr. A. S. Heath*, associate editor, is of special interest, and full of valuable information for every one engaged in dairying.

Godey's Lady's Book for December (L. H. Haulenbeck & Co., Phila.) contains one of the prettiest steel plates that have ever been issued with the Magazine. "Sleeping Love" is really a work of art much above the par of ordinary engravings such as accompany the average periodical. The same might be said of the other illustrations in the book, all of which indicate good taste and a liberal policy in the management of the Magazine.

During the coming year the literary attractions of *Godey's Lady's Book* will be largely multiplied. The Two Hundred Dollar Prize Story will appear in the January number, which will also be accompanied by a Christmas card and several special features. The Magazine has never done so much for its subscribers as it is doing now, and the large increase in its patronage is well deserved.

Wheat Culture, How to double the yield and increase the profits, by D. S. Curtis. Published by the Orange Judd Company, New-York. Price, 40 cents. The importance of the Wheat crop as a source of revenue to the country has induced the publication of this pamphlet, the principal object of which is to teach farmers how they may increase their crops and improve their lands. The author, than whom there are few more familiar with this subject, has sifted and here brought together in a small space an immense amount of valuable information, thus supplying a seriously felt want, that of a condensed yet comprehensive manual of practical Wheat-growing. Perfect Drainage, Deep Cultivation, Alkaline Matter, Clover and Plaster Rotation, Careful Selection of Seed, Cultivating and Early Harvesting, the author considers the requisites essential to produce increased yield of Wheat and continued good crops.

The Health Miscellany.—This is the title of an illustrated octavo pamphlet, published at twenty-five cents, by the Fowler & Wells Co., 753 Broadway, New-York. It contains a series of papers devoted to important health topics, opening with an excellent article on the External Senses, with illustrations of the eye, ear, nose, tongue, and skin, giving important information in regard to the functions and also the care of these important organs of the body. The next is an illustrated article on the Cause and Cure of the Backache, especially found among so many women. A chapter on Ethnology is illustrated with a number of portraits showing the races of men. A very important paper is one devoted to Bodily Positions and Dress in relation to health and form. The Teeth, their use and care, containing illustrations showing how the teeth are formed and grow, why and how they decay.

Many other hygienic topics upon which the people need educating are intelligently discussed in this pamphlet, the reading of which is amply worth its small cost.

Edwin Alden & Bro's American Newspaper Catalogue, *Cincinnati, O.*—This large, elegantly gotten up volume of nine hundred pages contains lists of all Newspapers and Magazines published in the United States and the Canadas; together with the Population of the Cities, Towns, Counties, and States in which they are published; their Politics, Class, or Denomination, size, and Estimated Circulation. Also Special Lists of Religious, Agricultural, the various Class publications, and of all Newspapers published in foreign languages; and a list of all Newspapers and Magazines in the United States and the Canadas by Counties. The whole especially arranged for the convenience of advertisers.

The number of newspapers and magazines published in the United States and the British American Provinces, as herein catalogued, is: Total in the United States, 14,111; in the British American Provinces, 091. Published as follows: Dailies, 1357; Tri-Weeklies, 71; Semi-Weeklies, 169; Sundays, 205; Weeklies, 10,075; Bi-Weeklies, 39; Semi-Monthlies, 288; Monthlies, 1502; Bi-Monthlies, 26; Quarterlies, 83. These statistics show an increase in the total number of papers this year over last of 1529. The introductory chapter on the Science and Art of Advertising contains many valuable hints, and is full of information useful to every advertiser.

How the Farm Pays: The Experiences of Forty Years of Successful Farming and Gardening, by William Crozier and Peter Henderson. Published by *P. Henderson & Co.*, New-York. Price, handsomely bound in cloth, $2.50.

This large octavo volume of four hundred pages, richly and excellently illustrated, and elegantly finished in every respect, is the result of the "happy thought" of the authors to lay before the world their life-long experiences in farming and gardening, not in the usual form of treatises, but in an easy colloquial or conversational style. No one can read a few pages of this work before becoming impressed of the great advantage of this method. One becomes involuntarily drawn into the conversation, and while listening to an answer or explanation, another question suggests itself to the reader, the same probably which soon follows in the book.

Both authors are so well known in the agricultural and horticultural world that it will hardly be necessary to state that the entire work is eminently practical, concise, and brimful of useful information and advice, of value to every one engaged in the cultivation of the soil. No one can read the work without feeling amply repaid for its cost, and the time devoted to its perusal; and no one who commences it will lay it aside before having read every page, so pleasing and attractive is its style.

We cannot refrain from quoting the following admirable remarks of Mr. Crozier, which, if they could be printed in golden letters before the vision of every city-bred man longing for the delights and profits of farming, how many fortunes could be saved, how many sad disappointments avoided. Farming can only be made to pay by those who know how. "No man," says Mr. Crozier, "should attempt farming or gardening, in the hope of making it a profitable business, unless he is willing and able to take hold with his own hands, and employ his own brains in the work. Many educated city people delude themselves with the belief that their want of knowledge of rural affairs will be more than compensated by their advantages of education and business experiences, when they conclude to engage in farming. This delusion draws hundreds from the city to the farm to their ruin every year. The only true way for a man who has previously been engaged in other business, and who wishes to become a farmer, is to get the privilege of taking active hold of the work, under the instruction of some farmer who has made the business a success. I do not, of my own knowledge, recall a single instance in which so-called gentlemen farmers have ever received their original investment back, although many of them, having competent overseers, are handling their fancy stock in a manner which, if energetically followed up as a business, ought to pay them nearly as well as us farmers who have to make our living by it."

To this, Mr. Henderson adds: "With all our care in selecting young men who come to learn the finer parts of horticulture, not more than one in ten ever attain to any prominence, and such usually develop superiority from the first."

The chapter on "Training for the Business of Farming" is followed by discussions on Manures and the Modes of Application, Plowing, Harrowing, and Cultivating, Rotation of Crops, Crops for Soiling and Fodder, Grass and its Management, Cutting and Curing of Hay, Live Stock on the Farm, Pests of the Farm, Farm Machinery, etc.; Vegetables and Fruits, descriptions of the leading varieties and their culture, are treated in separate chapters by Mr. Henderson, with a special view as to their management on the farm and in the market garden. All the latest improvements in methods and varieties are here brought to the notice of the reader, making the work of much value not only to the farmer and market gardener, but to any one interested in the cultivation of fruits and vegetables.

ANSWERS TO CORRESPONDENTS.

Dandelion Culture.—*H. M. S., Savannah, Ga.*—Dandelion is raised from seed sown as early in spring as possible. The seedling plants are kept cultivated during summer, and in the fall taken up and transferred to frames or greenhouses, where they may be forced as desired during winter. The earlier they can be brought to market the better. The young leaves are the part used, for salad principally. The dried roots used in the preparation of medicines are imported from Europe at a lower cost than they could probably be grown here with profit.

Top-dressing Lawns. — *M. F., New Haven, Conn.* — Well-decomposed barn-yard manure makes the best top-dressing for a lawn. If put on now its fertility will seep in the ground during winter, and the loss from evaporation is so small as to be hardly worth considering. Coarse, fresh stable manure is, although better than none at all, objectionable on account of the untidy appearance it gives the place all winter, and in spring all the litter has to be raked off again. Of concentrated fertilizers, fine bone-dust produces the most permanent benefit.

Potato Scab.—*N. C., Roxbury, Mass.*—"What causes scab in Potatoes?" Don't know! Why will people insist on asking questions that nobody can answer? Wireworms, grubs, Potato beetles, and what not will eat holes into Potatoes; but these are not scab. According to our present knowledge scab is caused by some minute animal or vegetable parasites which attack some varieties in preference to others, and are more disastrous in ground fertilized with stable manure than when commercial fertilizers are used.

CATALOGUES RECEIVED.

J. T. Lovett, *Little Silver, N. J.*—A beautiful colored plate of the new Grape Jessica, with numerous testimonals as to its value as an early, hardy white Canadian Grape. Mr. Lovett is the sole agent for the United States.

V. H. Hallock, Son & Thorpe, *Queens, N. Y.*—Catalogue of Bulbs and Plants, containing a full list of all the best spring-flowering bulbs, also Lilies and other bulbous plants. A great number of illustrations, and an excellent introductory article on "Flowers of Spring," by Mr. John Thorpe, gives special value to this catalogue.

A Great Expense Saved in buying a farm in Michigan. It is not necessary to transport heavy or bulky material any great distance. Agricultural implements adapted to the soil, and household goods can be purchased here as cheaply as in the Eastern and Middle States. Cattle and horses need not be brought unless of a superior class, as good horses and cattle can be purchased for much less than they can be landed here; besides, Michigan farmers find a market for the products of their lands right at their doors. Write to Hon. O. M. Barnes, Lansing, Mich., for particulars.

MUSICAL.

From the Boston Evening Traveller.

The Knabe Piano, which has such a wide popularity, is considered by many experts to be superior in every way to any other Piano in the world. The success of this Piano has only been attained by years of careful study, and the Knabe, with its excellent singing qualities, its great power, the elasticity of touch, and superior workmanship, is justly the favorite. Herr Faelten's piano solos at the recent Worcester festival, the Schumann's concerto, in A minor, op. 54, and Liszt's Rhapsodie No. 4, which were so highly praised, were both performed upon a Knabe Piano, Herr Faelten pronouncing it to be the best Piano he had ever seen.

YOUR

SUBSCRIPTION HAS EXPIRED.

Please renew early. Why not to-day? Several thousand subscriptions expire with this issue, and your prompt renewal will save us much work and expense. Why not ask your neighbor to let him send his subscription along with yours? Please see the October GARDEN for seed and plant premiums, and list on this page for club rates with other publications. THE AMERICAN GARDEN for 1885 will be better worth your $1 than ever before.

ANNOUNCEMENT OF CHANGE OF OWNERSHIP OF THE AMERICAN GARDEN.

NEW-YORK, December 1, 1884.

To our Readers:

In announcing the change of proprietorship of THE AMERICAN GARDEN, we do so with feelings mingled with regret as well as pleasure.

During the past five years of its ownership, we had the satisfaction of seeing the journal grow from a small beginning to its present influential position and become a recognized authority on all horticultural subjects. That we are now prompted to relinquish its publication is a matter of sincere regret; but illness of our junior partner,—necessitating a residence in a milder climate,—upon whom devolved its principal management, makes such a step unavoidable.

THE AMERICAN GARDEN passes now to the hands of *Mr. E. H. Libby*, whose enterprise and extensive experience offer ample assurance that our readers can only derive benefit from the change; and as the editorial part will, as heretofore, remain under the charge of *Dr. F. M. Hexamer*, the excellence and high character of the paper will be fully maintained.

In thus taking leave of our readers, we feel assured that while the change relieves us from much arduous work, it cannot but result to their benefit.

B. K. BLISS & SONS.

The new publisher makes his bow with pen in hand, and says to all genial horticulturists:

NEW-YORK, December 1, 1884.

Kind Friends of THE AMERICAN GARDEN:

We have no trumpet to sound, and only promise that we shall try to make your magazine as worthy of your patronage as it has been in the past, and as much better as the degree of coöperation you give it will permit. It now becomes an independent magazine of general horticulture. Messrs. B. K. Bliss & Sons have given you a beautiful work of art, and have well deserved your support.

But you have only half believed that the magazine was impartial. Now you have no reason to doubt, for we have *nothing to sell*. If you will second our efforts with subscriptions and advertisements, we will do our part toward making a *helpful, valuable*, special journal of your interests.

Yours horticulturally,
E. H. LIBBY, Publisher.

The January number of the AMERICAN GARDEN will contain an announcement of our plans and contributors for 1885.

ARE YOU READING ANYTHING?

THE AMERICAN GARDEN

In club with other publications.

If you want any of the following leading publications for 1885, we will send them in club with AMERICAN GARDEN for the prices named in the last column. This offer is good for both new and old subscribers. *And all club subscribers are also entitled to the seed and plant premiums offered in the October number of the* AMERICAN GARDEN.

A. *Publisher's price for both.*
B. *Our price for both, including seed premiums of The American Garden.*

	A.	B.
American Agriculturist	$2.50	$2.00
Arthur's Home Magazine	3.00	2.40
Atlantic Monthly	5.00	4.25
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Century Magazine	5.00	4.50
Christian Union (best of the great weeklies)	4.00	3.00
Country Gentleman	3.50	3.00
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Farm and Garden	1.50	1.25
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Floral Cabinet	2.25	2.00
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" Monthly	5.00	4.00
" Young People	3.00	2.50
Inter-Ocean (weekly)	2.00	1.75
New England Farmer	3.50	3.00
Our Little Ones and Nursery	2.50	2.25
Outing	3.00	2.65
Peterson's Magazine	3.00	2.50
Poultry World	2.25	1.75
Rural New-Yorker, with its great free seed distribution	3.00	2.60
St. Nicholas	4.00	3.50
Texas Siftings	3.50	2.90
Sun, New-York, weekly	2.00	1.60
Tribune, New-York, weekly	2.00	1.90
Youth's Companion (renewals)	2.85	2.75
Youth's Companion, new subscription	2.75	2.25
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Gardener's Chronicle	6.50	6.20
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The Garden	7.00	6.25
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If you want more than one of the above or any other publications in club with THE AMERICAN GARDEN, we will give prices on application. Address

E. H. LIBBY,
NEW-YORK. Greenfield, Mass.

ANSWERS TO CORRESPONDENTS:

Prickly Comfrey.—*S. H., Indianola, Tex.*—"What is it good for?" Up to within a short time the only living things we could induce to eat the leaves were ducks confined to a yard. They devoured them greedily, and a few clumps near the inclosure furnished a welcome supply of green fodder for them the greater part of the year. Ever since the introduction of the plant, some ten or twelve years ago, we have offered it to every horse and cow we had on our farm, not less than a hundred in all, without being able to make them eat it. But now we have a horse—a young, bright, spirited one, too—that will eat the green leaves with as much relish as corn-stalks. This discovery was a great surprise to us, as we had about made up our mind that Prickly Comfrey was an unmitigated nuisance on a place; but after this experience, we are forced to modify this opinion.

Seeding Meadows.—*A. O., Atlanta, Pa.*—The usual way of seeding meadows is to sow Timothy with Wheat or Rye in the fall, at the rate of eight to ten quarts per acre; and, in the spring, to sow on the same ground about ten pounds of Red Clover. If the hay is grown for sale, Timothy sells better than any other; but if to be used on the farm, a mixture of grasses will generally be found more profitable. Mr. William Crozier uses a mixture of never less than five, and sometimes as many as ten, varieties together, with a due proportion of Clover. His favorite mixture consists of one-half of the bulk in Orchard Grass, and the other half made up of Meadow Foxtail, Sheep Fescue, Rhode Island Bent, Hard Fescue, Sweet Scented Vernal, Meadow Fescue, English Rye Grass, Italian Rye Grass, and Red Top.

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contains twenty large pages of closely printed matter relating to the *Vegetable, Fruit*, and *Flower Garden*, the *Lawn, Greenhouse*, and *Window-Garden, Rural Life, Sanitary Improvements*, and all branches of *Horticulture* in its various departments.

Volumes commence with the January number, and it is desirable that subscriptions should begin with the first number of the volume, although they may be entered at any time for a year from the date of entry.

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Encouraged by the success of the premiums sent out in previous years, and desirous to introduce THE AMERICAN GARDEN into every home, we offer special and most liberal inducements for the current year. All articles offered are of actual merit and decided acquisitions, and several of them are now introduced for the first time.

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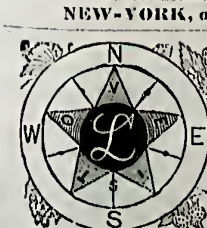

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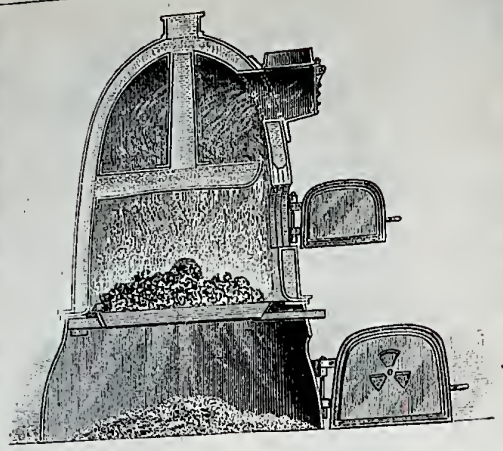
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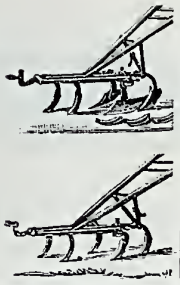

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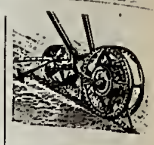
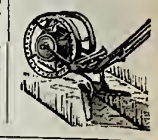

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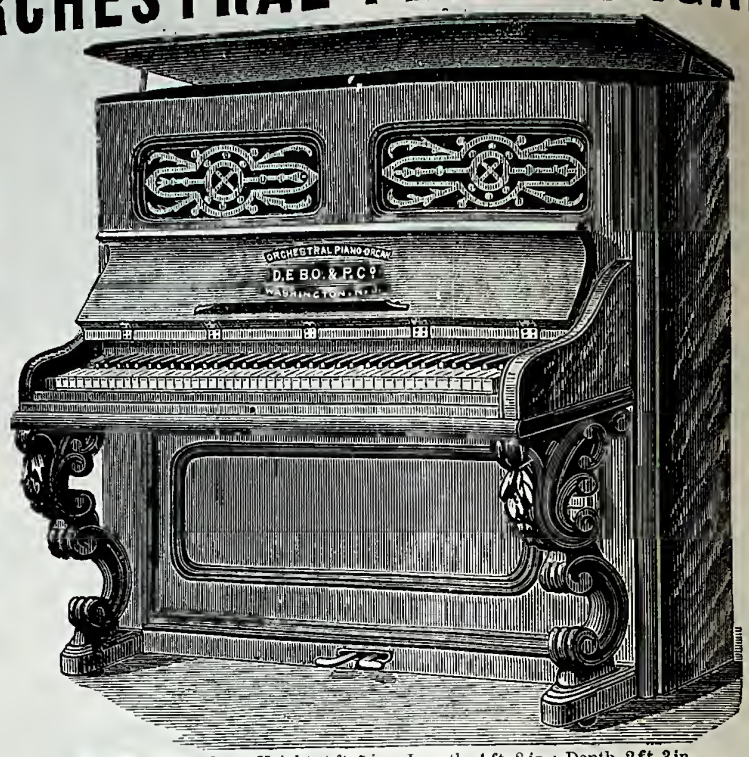

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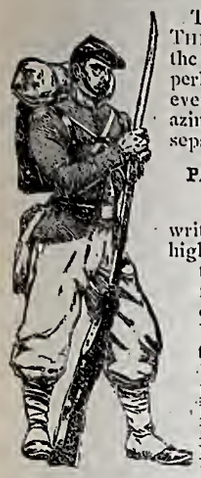

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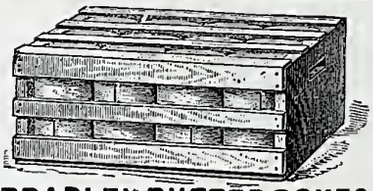

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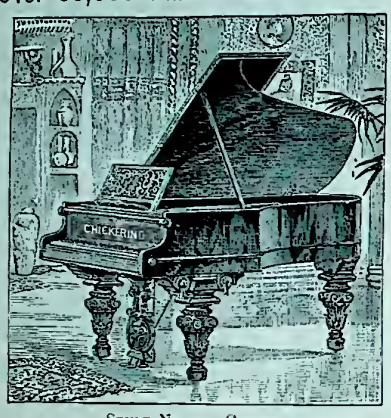

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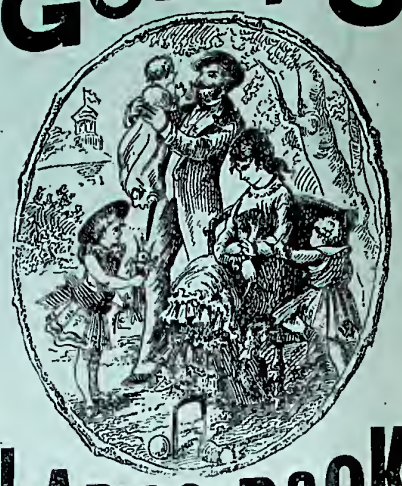

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Old Series, Vol. X

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No title page or index was ever printed for this volume.

The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. Hexamer, Editor.

Vol. VI. Old Series, Vol. XIII. JANUARY, 1885. No. 1.

THE OPENING YEAR.

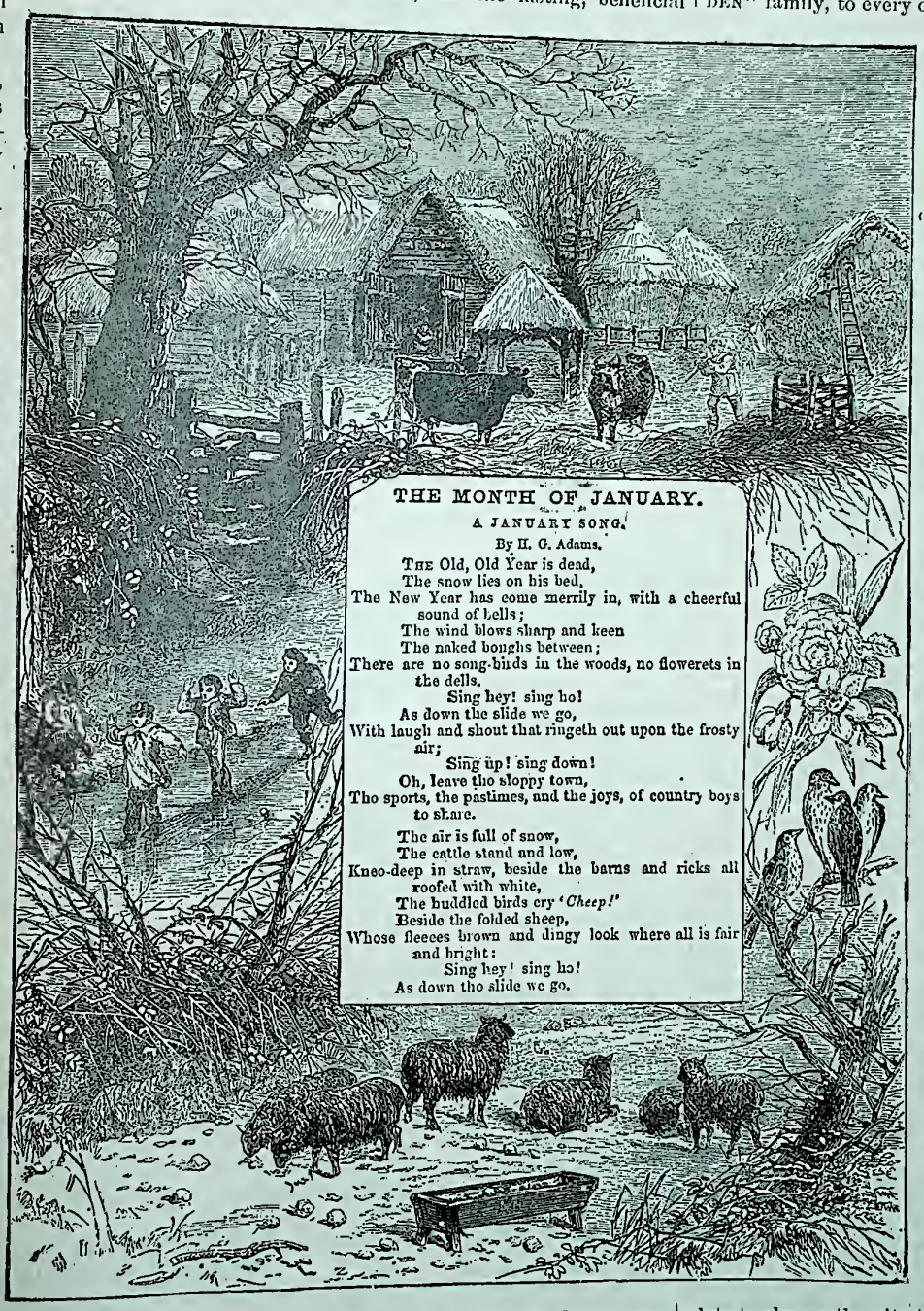
Seasons come and go without any sharply defined lines, so that except in the calendar, one hardly notices the end of one and the beginning of another. But a new year brings with it something that arouses our activity, and stimulates the mind of even the most utilitarian nature more than any other event.

The old year, closing with its Christmas festivities, its days of joy and merry-making, its season of good-will to all mankind, makes room for the new, and it is now eminently proper to review past successes and failures, and to consider how to improve upon the former, and how to avoid the latter in future. Indeed, time cannot be devoted to better advantage at this season than to carefully delineate and mature our plans for the future, based upon the results of past experiences.

While our gardens are covered with snow, and outdoor plants are taking their winter rest, the lengthening days are already reminding us of the approaching spring. The wise gardener is never idle. He will even now find plenty to occupy his time, not merely in selecting and providing seeds and plants, and other material that may be wanted, but in cultivating the garden of his mind, and by stocking it with the best and most reliable information obtainable from all sources.

In this connection we wish to remind our readers that the American Garden stands ever ready to furnish all friendly advice and information within its means, that it will gladly answer all inquiries about horticultural topics, and will always make it its highest aim to be considered a welcome friend in their homes as well as their gardens.

Horticulture as a means of education is rapidly becoming more and more recognized; the refining influences of tastefully planted and neatly kept grounds are apparent to every observer; and the lasting, beneficial impressions which attractive home surroundings have upon the mind of the young are plainly evident. The love of flowers is not a mere idle sentiment, but is deeply rooted in every pure mind. To direct and guide this fondness so as to become promotive of the greatest good, and to increase happiness and love of home, is one of the chief missions of true Horticulture. May the year upon whose threshold we just step extend its realm to every home; may it bring a rich harvest of fruits and flowers, and a richer still of health, happiness and content to every member of our great "Garden" family, to every one of whom we sincerely wish a Happy New Year.



THE GARDEN VS. THE BENT.

With proper management, and under favorable conditions, an acre of ground can often be made to produce larger profits than many a hundred-acre farm slovenly conducted. Experienced market gardeners near large cities are proving this every year; but it is not practical gardeners only that raise large crops from comparatively small areas. We have in mind a professional man, who, by spending his leisure hours in his garden of about a quarter of an acre of ground, raises nearly all the vegetables used by his family. We know of several other instances in which the products of the garden pay a considerable part of, if not the entire rent of the land as well as the home.

Less land and better tillage is the great need of progressive gardening and farming. How much toward the rent can the amateur gardener raise in his garden, is a question foremost in the minds of many who contemplate to change the city tenement life for a home in the country. If any of our readers solve this problem, please let us know: "How the Garden Paid the Rent?"

For Prospectus and Publisher's Announcements, see pages 14 to 16. Look for presents to all our subscribers.

Copyright 1885, by E. H. Libby.

The Vegetable Garden.

SEASONABLE HINTS.

As the prudent soldier in peace prepares for war, so will the provident gardener make now preparations for his contemplated garden. Next to outlining a complete working plan, and to securing all knowledge necessary in carrying it out successfully, the selection of the seeds needed for the purpose is most seasonable. This can be done now with more care and better discrimination than at any other time.

What to Select.—In vegetables as in everything else tastes differ. We heard once a gentleman express his preference for Marrow-fats over all other Peas, and we know several persons who detest mealy Potatoes. Each one must therefore be guided by his own likings and dislikings.

Some people, and not a few either, are constantly hunting for something new, and the first question they ask of the seedsmen is about the novelties of the season.

Novelties are, for once, exceedingly scarce this year, phenomenally so, which is a matter of congratulation, and may give novelty hunters an opportunity to convince themselves of the value of some of the older kinds.

Seedsmen get a good deal of blame in this matter of introducing novelties, deservedly so in some cases, but in many others without a particle of justice. A seedsman who has an established business, and who has a reputation to lose, would not any sooner, knowingly introduce a worthless novelty, than he would let his note go to protest. But the laws of demand and supply are alike in all trades. As long as there are people who insist on having novelties in dry goods, or bonnets, or hats, or seeds, some one will furnish them.

Trying Novelties brings with it considerable fascination, as much so as investing in lottery tickets, and with the same degree of probability in getting back the investment. Yet their are some prizes in lotteries as well as in novelties. The most valuable standard varieties of vegetables of the present day were first introduced as "novelties" by some enterprising seedsmen.

The point we wish to impress most on our readers, in regard to making a selection of seeds, is that the lists of our older garden vegetables comprise already many varieties of the highest excellence, and that those who wish to experiment will derive probably more satisfaction by making themselves acquainted with some of the older varieties than by trying novelties. No one need expect to find much improvement over American Wonder and Champion of England Peas, Early Valentine and Refugee Beans, Egyptian Beet, Beauty of Hebron and White Star Potatoes, and many others long cultivated.

Quality in vegetables as well as in fruits depends not altogether upon the variety. As in animals it depends upon the "feed as much as the breed." A great part, the greater in fact, is owing to the conditions of soil, fertilizers and the mode of cultivation. Some kinds of vegetables are actually unfit for use unless they are grown rapidly and luxuriantly. To derive the full benefit and pleasure from the garden, one must study the requirements and needs of the plants.

POTATO FERTILIZER TESTS.

A knowledge of the special needs of our soils is one of the most important factors in profitable land culture. This knowledge however, is not as easily procured as it may appear to the casual observer, and it is only by carefully conducted, and oft repeated experiments that anything like conclusive deductions can be obtained. The results of the Potato tests with different fertilizers and with various combinations of them, made last summer by *Mr. E. S. Carman*, editor of the *Rural New Yorker* seem to us highly instructive and deserving the thoughtful consideration of every cultivator of the soil.

The soil of the plots selected was a worn out sandy loam, level, and naturally well drained. The seed had been cut several days previously, the White Star having been selected as, by its season of maturity, keeping qualities and vigor well suited to such tests. Potatoes of nearly the same size were cut in halves lengthwise, the seed end of each having been cut off and rejected. The seed conditions were made still more equal by using the same weight of seed pieces to each plot. Trenches had been dug several days previously, two spades wide and six inches deep, the trenches *six* feet apart so that the roots of one trench should not reach and feed upon the fertilizer of the adjacent trenches. Later two inches of soil were raked into the trenches and upon this the pieces—cut surface down—were placed one foot apart. Two inches of soil were raked over them, and the fertilizers applied.

Twenty-eight plots were planted, the kind and number of pounds of fertilizer applied to each, the relative growth of vines, the total weight of the yield, the total number of Potatoes and the number of marketable Potatoes being recorded in an admirably arranged table. Our space does not permit to give the entire list, but the following will show the most prominent results of these experiments:

Fertilizer applied:	Yield in pounds:
None,	13¾
Dissolved bone-black,	16¾
Nitrate of Soda,	17
Sulphate of Potash,	21
Nitrate of Soda, Dissolved bone-black and Sulphate of Potash,	29½
Yard manure, two years old,	30¼
Mapes' Potato Manure,	35
Mapes' Potato Manure, Kainit and Hay Mulch,	47

As stated above, to insure accuracy, the rows were planted six feet apart, but there is no doubt that the yield would have been as good, if not better, had they been only three feet apart. Assuming the latter distance, the yield from the unmanured soil would have been 139 bushels per acre, while Mapes' Potato Manure would have produced 256 bushels per acre, an increase of 117 bushels, and Mapes' Potato Manure with Kainit and Hay Mulch produced 344 bushels per acre, an increase of 205 bushels over the unmanured ground.

"Many farmers who have tried plain superphosphates alone, raw bone alone, or potash alone, or any two, will see from our tests," comments Mr. Carman, "that they should not condemn so-called chemical fertilizers because any one, or even any two, should fail to give a marked increase of crop. If a soil needs all kinds of plant food, and is supplied with but one, no matter how large the quantity may be, the crops will not be materially benefited. Thus it will be seen that in our careful tests, potash alone did no good. Dissolved burnt bone, which furnishes phosphoric acid only, did no good. Nitrogen increased the growth of the vines, which, for want of potash and phosphoric acid in the soil, gave no increase of tubers. But the complete fertilizers—these which furnish all three—gave an increase of crop in every case.

"Study this question, farmers and gardeners. It will pay you to do so. If you don't know what your land needs, use *complete* fertilizers until you find out. You *can* find out by making just such experiments as these.

"Plants, like human creatures, need a complete food, and if the soil does not supply it, we must feed the soil with the deficient element. If the soil from exhaustion needs every element, we must supply a complete food.

"We are not advocating the use of fertilizers at all—neither are we discussing the question as to whether, at their present price, we can *afford* to use them. We merely wish to show that they do furnish the constituents of food to plants the same as stable or farm manure or composts of leaves, muck, straw, or any other substance furnish them, and that we have but to supply the elements which our soil needs, to render it fertile."

PREPARING CELERY FOR MARKET.

When properly grown and bleached, and carefully prepared, Celery is not only a most delicious vegetable, but contributes an essential part to the decorations of the table; it has therefore to stand the test of sight as well as taste, the white or amber of the foot-stalk, shading into the green of the upper leaves, the firm, brittle quality of its substance from center to extremity, the agreeable nutty flavor heightened by proper cultivation are qualities sought both by producer and consumer.

Upon the proper bleaching process depends very much the value of the crop. An unbiased judgment will, I think, give preference to earth-bleached Celery, which comes into market after the middle of November. The early crop is generally affected by the heat; while the later is sometimes injured by the artificial bleaching, necessary to its preservation during the winter months. There are many ingenious devices for bleaching Celery, all aiming to dispense with the handling of so much earth; but, all points considered, the earth process is to my mind the best yet discovered.

Bleaching with sea weed is the favorite method along the coast of New England, and is that which gives the excellent flavor and color to the Boston Celery. Pit bleaching by the exclusion of sunlight and under a low temperature is effectual but not always very satisfactory.

My experience is that the Celery sold previous to the holidays; is the most profitable part of the crop that kept later is subject to so many losses by mice, flood, frost, rust and decay, that although the price by the dozen may be higher the average profits for one hundred roots, are no greater than in November.

It is possible to keep small quantities of Celery undisturbed in an equitable temperature for a considerable period, and

housekeepers who raise their own Celery have found this a convenient plan, but the gardener who supplies the market in competition with his neighbors knows the loss and damage to which Celery is subject in cold and snowy weather.

The form and size of the bunch varies according to usages of the market in which it is sold, and dealers must govern themselves accordingly. I have in mind an amateur that dug his Giant Celery from the trench with a pick-axe, took it unwashed in his wagon to market, with the outer leaves solid with frost, the inner ones badly covered with water blisters; consequently when brought into a warm room it was soon in ruins: had it been left in the trench till a warm, sunny day it might have been saved.

The outer leaves of the plant are always hollow, and should be taken off, the root trimmed into proper shape, the bruised or broken tops cut off neatly, and then washed. A brush with soft bristles, or a small brush-broom are best for this purpose, as they search all the crevices, removing every particle of soil. The washing should commence at the root, working towards the top, using tepid and not too warm water, which has a

CELERIAC.

tendency to destroy the structure of the leaves and to give them a withered appearance, handle and pack carefully to avoid broken stalks. In cold weather, hot bricks or a burning lantern placed in the box in which it is carried to market, will keep out frost and save the Celery.

In retailing Celery I have had the best success with small or medium sized bunches; or those that could easily be divided, for it is an acknowledged fact that two small bunches at twelve or fifteen cents each sell quicker than a large bunch at twenty-five cents.

W. H. BULL.

SOME RARER VEGETABLES.

In addition to the large number of excellent vegetables that we find in every good garden, several are named in our seed catalogues that we very rarely see in cultivation. Some of these rarer vegetables are little grown, because they are little valued. A few of them, however, are not found in our gardens, chiefly because their merits are not generally known. I mention here three vegetables which are very rarely seen in cultivation in this country, but which it seems to me, need only to be better known, to be appreciated by the public generally.

CELERIAC.

First, I mention the Celeriac, or Turnip Rooted Celery. Although this vegetable is said to have been developed from the same wild plant as our common Celery, it is quite different from the latter in its manner of growth. The leaf-stalks are comparatively short and slender, while the root, instead of being simply a branching tap-root, like that

HAMBURG PARSLEY.

of our common Celery, is thickened into a large fleshy expansion, resembling the Turnip. In the more improved varieties, this bulb-shaped root is quite smooth and regular in form. Boiled until tender, and seasoned with milk and butter, and a little pepper and salt, the roots form an article of food, that is very palatable to many persons.

This vegetable is grown in the same manner as the common Celery, except that the plants require no hilling up. I have not tried sowing the seed in place, but I see nothing to prevent growing the crop in this way, if the seed were sown very early in the spring. I have started the plants in boxes in April, transplanting them to the garden early in July. They may be set out in rows eighteen inches apart, spacing the plants six inches apart in the row Keep the soil free from weeds, and the surface mellow during the season. Late in autumn, the plants should be taken up, and packed in sand in the cellar, where they will keep well during the winter.

COMMON PARSLEY.

HAMBURG PARSLEY.

Another vegetable not much known, is the Hamburg, or Turnip Rooted Parsley. This also seems to be the Common Parsley, with the root developed instead of the foliage. Indeed, it is comparatively, a modern vegetable. The thickened roots have not yet attained the symmetry or form of those of the Carrot and Parsnip, though a fair proportion of them are as regularly formed as the sample shown in the cut. Cooked in the same manner as noted for Celeriac, the roots are very palatable to those who like vegetables of this class.

The seed of Parsley is quite slow to germinate, and therefore failures often result from seed planted in the open ground. I have had excellent success, however, by sowing the seed in boxes, placing the latter in the hot-bed of green-house, where they are regularly watered. Doubtless if watered frequently, the seed would vegetate as well in the open ground. I transplant the plants to the garden at the same time as those of Celery, in rows about eighteen inches apart. The after culture, and the storage during winter is the same as noted for Celeriac.

FENNEL.

The third vegetable of the trio is, I think, still more rare in this country than are the other two. Indeed, I have never seen it except in my own garden, nor have I seen it mentioned in American catalogues. It is the Finocchio, or Florence Fennel. The foliage bears a close resemblance to that of the Common Fennel, but the broad flattened bases of the petioles are folded closely upon one another, forming a solid bulb-like expansion about three inches broad, and an inch and-a-half thick. This thickened expansion is the part used, and when cooked in the manner above noted, has a taste somewhat resembling that of Celery, but much more sweet. Tastes differ so much upon vegetables of the Umbelliferae class, that it is impossible to pronounce any of them as agreeable to all palates. The Florence Fennel is considered delicious by some persons, while it is unpalatable to others. The same is true of the Carrot, Parsnip, and Celery.

FENNEL.

It seems to thrive remarkably well in our climate, and is of very easy culture. Planted early in the spring, it was fit for use the first week in August. I started the plants in the same manner as those of the Hamburg Parsley, and the culture is the same, except that the thickened part of the root is covered with soil a short time before it completes its growth. I think it would answer as well, if not better to sow the seed in moist soil in the open ground, early in spring. It is strictly an annual plant, and yields its seed the first season. It is possible that by late sowing it might be grown so as to mature late in autumn, and thus be kept during a part of the winter. "ELM."

[Fennel is offered by seedsmen among the "Herbs and Medicinal Plants."—ED.]

JUDGING NEW VEGETABLES.

We know of no more pleasing experience in gardening than the testing of new vegetables on the table by the family. For several years we have cultivated many varieties of sweet corn, cucumber, lettuce, cabbage, carrot, potato, etc., both new and old; taken careful notes in the garden, and at the table notes were also taken of appearance, flavor and texture. These notes are kept, and are found to be of great value in selecting varieties for culture in subsequent seasons.

The Fruit Garden.

SEASONABLE HINTS.

Pruning in Winter when the wood is frozen may sometimes produce injurious results, but during a succession of mild days—as they do not seldom occur during this and next month—pruning may be carried on as advantageously as at any time. And when the question is whether to prune now or not at all, we say, by all means prune now, provided the tree needs pruning, and you know what to prune for. Without a definite object it is better not to prune at any time.

Girdled Fruit Trees.—When there is much snow on the ground so that mice and rabbits are prevented from finding their necessary food they will as a last resource, gnaw the bark of young fruit trees which in consequence become more or less seriously injured. If only a small portion of bark has been destroyed, and the tree is otherwise in healthy condition, new bark will grow over the wound again in a season or two; but if a complete ring all around the stem has been eaten off, the tree will surely die unless surgical aid is given.

As soon as the injury is noticed, the wound should be covered thickly with soft clay or soil, and tied up firmly with matting or rags. In May—about grafting time—the bandage is to be removed, the wound cleaned, and four or five cions from the same tree—or another of the same kind—are to be inserted so as to unite the upper with the lower edge of the bark, exactly as in cleft grafting. If the operation is carefully performed not one tree in a hundred need die, and the wound will heal over completely in a few years.

Mice may easily be prevented from gnawing trees, by simply tramping the snow down a few feet around the stems. This has to be done after every snow-fall, of course, and as the mice are sometimes earlier at work than man, they do occasionally get the best part of the bargain. Banking or hilling soil around the stems is therefore safer. The mounds should be twelve to eighteen inches high, as steep as possible, and firmly packed all around.

When only a few trees are to be protected, tar-paper or any kind of cloth, or better still tin, may be tied around the stems as much below the surface as feasible without injuring the roots, and ten to twelve inches above. Where rabbits abound these bandages should be carried up at least two feet.

Leaves are Natures manure, and, as in everything so here, we can learn much from her by following her ways. The rich soil in fence corners, and other places sheltered from winds, is largely due to the leaves that have accumulated and decayed there during a series of years.

There is hardly any more profitable work during winters when there is no snow in the woods, than to gather leaves. Where livestock is kept unlimited quantities may be utilized for bedding; otherwise they may serve an excellent purpose for mulching Strawberries and other plants. They may also be strewn thickly along the rows of Raspberries, Blackberries and Currants, if covered sufficiently with manure or soil to prevent their being blown away by the wind. A compost of leaves, stable manure and soil, prepared now, will make a most excellent top dressing for newly planted Strawberry beds next summer.

THE AFTERNOON SUN.

That the afternoon sun injuriously affects the trunks of fruit trees is well known, though perhaps the full extent of the injury, as well as its peculiar character, is not fully comprehended. Cherry trees having round, smooth trunks, rarely shaded by the branches are injured most; yet the injury to Apple trees is but little less, while the injury to Plum, Pear and Peach trees, and even to Gooseberry and Currant bushes, is often so great as to occasion decay.

The injury proceeds from the over-heating of the sap. The position of the trees is unnatural in this that on account of isolation and pruning the trunks cannot be shaded by their own or others' tops. While the forenoon sun begins the heating of the sap, the temperature is not raised to such a pitch as to occasion injury until sometime in the afternoon, hence it is commonly said that the afternoon sun occasions the injury. But protecting from the morning sun and from the first hour or two of afternoon sun would avoid the injury, as the balance of the afternoon sun would not be sufficient to heat the sap to the injuring point.

It should be remembered that the cool night air, re-inforced by the falling dews, very materially reduces the temperature of the entire trunk, and several hours of sun are necessary to heat up the bark and then the sap. It would appear to be the wiser plan to guard against the sun during the earlier hours, though the contrary plan is generally adopted. This injury to the trunks of trees is greatest in the South, though not fully so great as the actual difference in temperature of the air would indicate; for the adaptability of those trees grown in the South to withstand greater heat, makes the damage to them less than would be inflicted by an equally high temperature upon trees in the North.

This would indicate the fact that trees may become accustomed to their conditions—a truth. Trees grown so closely together that the trunk of each is shaded by the others, if subjected to the heating action of the sun, are much more injured than those which have been grown isolated and thus accustomed to this heat. This should be taken into account when trees grown closely together in the nursery row are transplanted, and greater care be taken to protect the southern side of their trunks from the hot sun. Such trees as the Cherry, Peach and Plum, and some varieties of the Apple, having bright, smooth and compact bark, grown in nursery rows, are greatly injured by transplanting to positions so isolated that their trunks are not shaded by the foliage of other trees; and if trained high the first year after transplanting, will make no growth in the south and but little in the central belt, unless protected from the sun.

When we see a tree dying, and it is apparent that the cause of this decay is the burning of the bark and heating of the sap by the sun, we are apt to assign the effect to its proper cause. But generally when the injury does not prove fatal we fail to perceive the cause, or else ignore it. A perfectly healthy tree, and one symmetrically developed only can produce the highest yields and the nearest perfect fruit; and in the struggle against insect and other depredators such a tree has a great advantage over one unthrifty and abnormally developed, as insects and fungi will always attack the least healthful and vigorous part.

In this connection I may state that in the South, at least, it is very apparent that the proportion of unshaded Pear trees afflicted with blight is four times that of those protected. Even in the North a majority of our orchard trees will be found, when not protected, with trunks flattened, and more or less diseased on the southern side. This is certainly due to the injury resulting from the heat of the sun, since the flatness being always on the south side shows that the injury always comes from that direction, and it is hard to conjecture any cause other than the sun which would invariably proceed from this point. A flattened (undeveloped on the flat side) trunk must lead to an undeveloped top on that side; and this further increases the injury, for the trunk receives less and less shade from that side—the side where it is most needed. And as the injury and disease progress, the more successful in their attacks will be insects and fungi, which will always favor the diseased portion.

The trunks may be protected by driving a wide board down on the south side, or by fastening it loosely to the trunk, enlarging the fasteners as the growth of the tree demands. Two boards nailed together at a slightly obtuse angle are better than one, and equal in effect too, while requiring fifty per cent less material than a box, often recommended. But I consider the best plan, with Apples and Peaches at least, to form low spreading tops, having just as little trunk as possible. By this plan the injurious effects of the hot sun are avoided; the effects of winds are lessened, and the diseases of the trunk and the work of enemies to this part of the tree are reduced by just so much. The best Peach and Apple trees I have ever seen had no bare trunk whatever, the limbs branching out at the surface of the ground.

JOHN M. STAHL.

A SERVICEABLE STORE-HOUSE.

The great convenience and advantages of a good store-house for fruits and vegetables are not as extensively known and appreciated as they should be; and much disappointment and loss are yearly sustained by those that have no such building. It is not necessary that such a structure should be an expensive one. Any farmer or gardener that can build an ordinary shed can easily construct a store-house that will fully answer the purpose, and for the benefit of those who may wish to construct such a building,—and no fruit grower or gardener should be without one,—will submit a simple plan, at once, cheap and durable.

Any substantial out-building large enough to hold the crops to be stored, may be made to serve the purpose. On the inside, about fifteen inches from the wall, build a partition of plank, raise this to the hight of four feet or better still, to the loft. Fill the intervening space with earth, which is durable, and is best, but straw, sawdust, or forest leaves will do, only these will have to be frequently replaced. A good close loft is essential, over which straw or sawdust should be spread a foot or so in thickness. Through the middle of the room, running

from each side of the door to the opposite wall, raise plank partitions about three feet high; these form a passway which is quite necessary. The house will thus be divided in two compartments, which may sometimes, advantageously be divided into still smaller ones. The wall of the building from outside to inside, will be about twenty inches thick, consequently the doorway will be the same number of inches in depth; on the inside hang a light door, and a heavier one on the outside; and when closing, after all crops are stored, fill the intermediate space with straw.

For storing Sweet Potatoes, which are, perhaps the most difficult product to keep the apartment designed for their reception should be divided into narrow cells by partitions which serve the purpose of ventilators at the same time. These partitions or ventilators, as we may term them, can be readily made by nailing thin, narrow boards on both sides of upright pieces, an inch thick, and about three feet high; lap the edges as is done in weatherboarding of a house, bevel—except two or three short spaces—the alternate edges of the lap so as to leave sufficient space between the boards to allow the passage of air into the inner space. These ventilating partitions should be made of sufficient length to reach across the apartment, and should be set up about twenty inches apart. Potatoes carefully stored in this manner and covered well with straw or soil, almost invariably keep well for a long time.

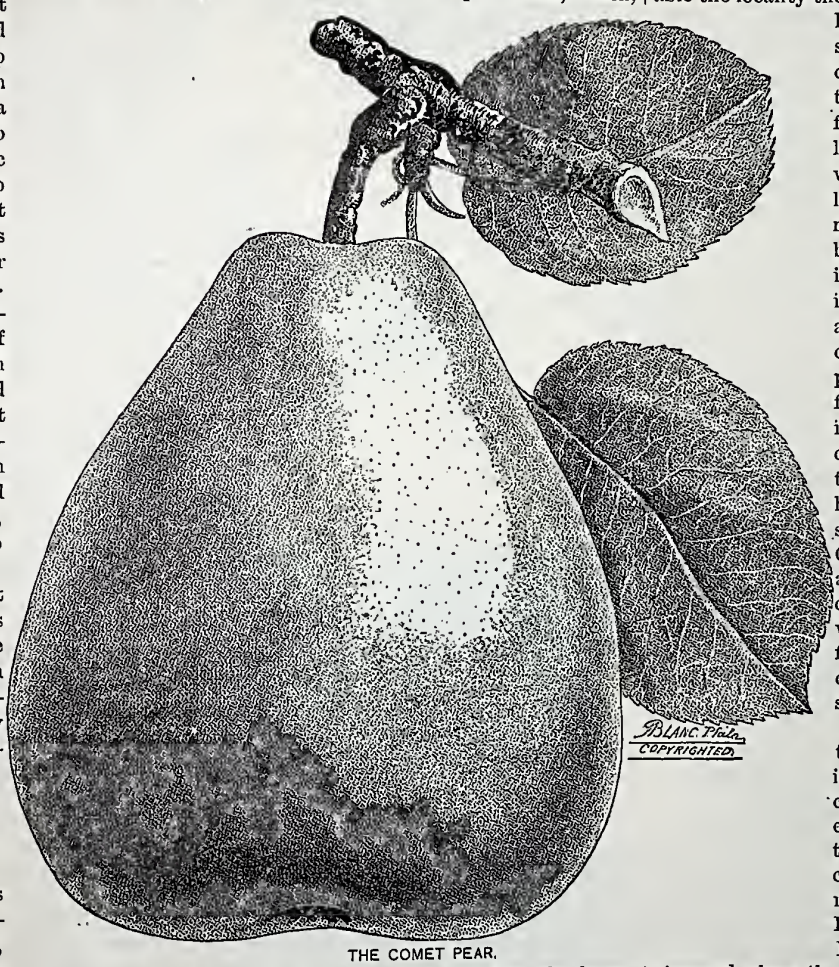
Apples, Turnips, in fact almost all winter fruits and vegetables, may be kept in good condition in such an all-purpose storehouse, which in many instances, will pay for itself in one season.

J. T. Baird.

THE COMET PEAR.

Among early Pears this new variety now introduced by John S. Collins, Moorestown, N. J., promises to take a prominent rank. The original tree, which is estimated to be between fifty and one hundred years old, was found growing in the Highlands of the Hudson in a most unfavorable situation among bushes and rocks, with apparently not room enough for its roots to penetrate. The fine appearance and good quality of its fruit attracted the attention of the owner and some fruit growers who considered the variety of sufficient merit to be made known to the public. Not having seen the fruit ourselves we rely on the description furnished by Mr. Collins:

"The Comet Pear has been grown to a limited extent in Ulster County, N. Y., latitude 42 degrees, for a few years. The trees are very vigorous and healthy, bearing abundantly when quite young. The fruit is of good quality, large size, splendid red and yellow color, and ripens in its original locality, in July. According to the statement of the commission merchant who sold the crop, they were the best selling Pear of the season, bringing from $6 to $8 per bushel."



THE COMET PEAR.

CELEBRATING THE GRAPE.

There is a pressing need of more light on Grape culture, for the reason that such knowledge can be turned to good account by nearly all classes. We cannot all have an orchard, or even a single fruit tree, said Ohio's veteran pomologist, *M. Crawford*, before the Summit County Horticultural Society. Some have not room for a row of Currant bushes or a Strawberry bed; but who has not room for a Grape vine? Its branches may be trained on a building or a fence. Its roots will run under the sidewalk, along the foundation, beneath the buildings—anywhere and everywhere—in search of plant food, which, dissolved in water, is carried to the leaves and boiled down, as it were, and converted into Grapes. What an opportunity this is for every man and woman to add to the comfort, health and happiness of those dependent on them! Horticulture gives to workingmen almost the only opportunity of adding to their income outside of working hours, and this branch of it is especially inviting to all amateurs.

I once knew of a large vine in a city lot that produced over a hundred dollars' worth of Grapes each season for several consecutive years. How much is it worth to have all the Grapes one wants for himself, his family and his friends for even three months in the year? And this is within the reach of nearly all, without making any effort to keep them beyond the season. With a little care, Catawbas and some other varieties may be kept in a cool room for months. Last July I ate ripe Raspberries, Blackberries and Catawba Grapes—the latter grown in '83, and kept in a fruit house.

The vine, besides furnishing such delicious fruit, adds greatly to the attractiveness of home. Even the name, "vine-covered cottage" or "vine-clad hills," suggests that which, once possessed, can never be forgotten. The culture of the vine has always had a refining influence over those who have engaged in it. The natives of the vine districts of Europe plant vines wherever they go. You can almost pick out their homes as you drive through the streets of any city of this country.

Grapes may be grown in all parts of the United States and Canada, wherever a Grape grower can be found, and the more unfavorable the locality the better generally will be his success; for this reason: The greater the difficulties to be overcome, the greater effort is put forth. If he lives far north, he will cover his vines in winter; if too far south, he will grow them on the north side of a hill or building. If his ground is too wet, he will drain it, or grow his vines in a raised border. The hills of Southern Ohio are especially adapted to this fruit, but Cincinnati gets its Grapes from the shores of Lake Erie. All over the South the vine is at home, but New Orleans sends to New York for Grapes. Michigan, cool and level, the last place one would expect this warm-blooded fruit to flourish, sends hundreds of tons to Chicago, and sends cuttings to France.

Some parts of our country are so favorable to this industry that success comes almost without an effort, but people are slow to learn that it may be carried on successfully almost anywhere. Dr. Buckley, now traveling in Europe, writes of a noted vineyard where the vines are planted in baskets and fastened to bare rocks six or seven hundred feet high.

CONNECTICUT NOTES.

At the recent meeting of the Connecticut State Board of Agriculture, Gov. Hyde related his success in renovating old orchards by plowing and cultivating. But it was thought that too deep plowing might work harm. Peach orchards were also greatly benefited by cultivation, but was thought harmful for quinces, though of well known efficacy in some other states.

Mr. J. H. Hale, the practical nurseryman of Glastonbury, said that the Keiffer pear does not mature with him, and he thinks that it is unsuitable for the vigorous and changeable climate of New England.

The Flower Garden.

SNOWED UNDER.

Of a thousand things that the Year snowed under—
The busy Old Year that has gone away—
How many will rise in the Spring, I wonder,
Brought to life by the sun of May?
Will the rose-tree branches, so wholly hidden
That never a rose-tree seems to be,
At the sweet Spring's call come forth unbidden,
And bud in beauty, and bloom for me?

Will the fair, green Earth, whose throbbing bosom
Is hid, like a maid's in her gown at night,
Wake out of her sleep, and with blade and blossom
Gem her garments to please my sight?
Over the knoll in the valley yonder
The loveliest buttercups bloomed and grew;
When the snow has gone that drifted them under,
Will they shoot up sunward, and bloom anew?

When wild winds blew and a sleet-storm pelted,
I lost a jewel of priceless worth;
If I walk that way when snows have melted,
Will the gem gleam up from the bare, brown earth?
I laid a love that was dead or dying,
For the year to bury and hide from sight;
But out of a trance will it waken crying,
And push to my heart, like a leaf to the light?

Under the snow lie things so cherished—
Hopes, ambitions and dreams of men—
Faces that vanished, and trusts that perished,
Never to sparkle or glow again.
The old year greedily grasped his plunder,
And covered it over and hurried away;
Of the thousand things that he hid, I wonder
How many will rise at the call of May?
O wise Young Year, with your hands held under
Your mantle of ermine, tell me, pray!

ELLA WHEELER.

SEASONABLE HINTS.

Next Summer's Garden.—Consider well and decide now what plants you wish to grow for next summer's garden, and govern yourself accordingly. Conclude upon the plan of your flower garden or beds, the kinds of plants you intend to order, how many of them, what you shall raise from seeds, slips or by division, when and how, and having formed your plans, adhere to them.

Don't wait for the seedmen's novelty sheets before making a selection. If you wish for pleasure in your garden, select plants of tried and sterling merit, and, if you have a few dimes more to spend, try a few of the noveltics just for fun, but don't be disappointed if they fail to surpass everything of their race you used to grow.

Soil for Flowerbeds.—How to bring it into best condition and composition may also be profitably considered now.

Heavy Soils are always benefited by an addition of sand, and there is no better season to cart it on than winter. It should be scattered evenly over the frozen ground, and at the spading in spring be thoroughly mixed with the soil.

Leaf mold and well decomposed stable manure are excellent for any soil, heavy or light. Fresh, coarse manure should be avoided in flower beds, and if no other is obtainable, it should be broken up as finely as possible and composted with soil a few weeks, or better, months before it is applied.

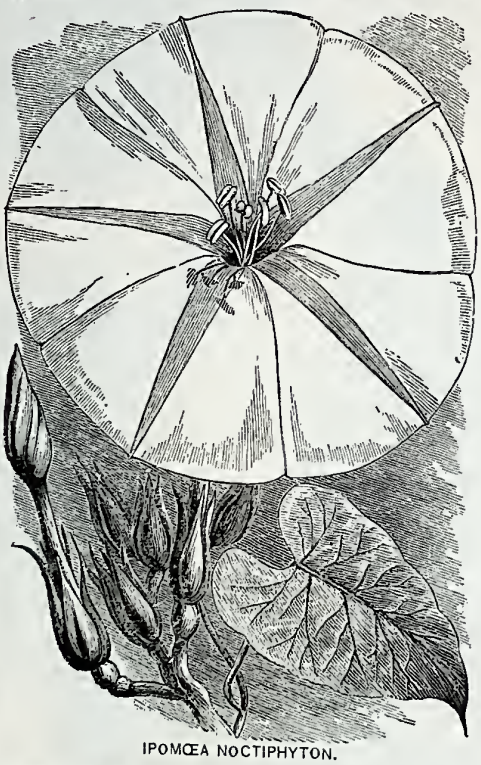
Propagating Carnations.—The easiest way to propagate Carnations is to layer them in the open ground when the plants are in full bloom or a little after, but they may also be increased by cuttings or pipings put in boxes or pots in gentle heat during January or February. When they have become sufficiently rooted they are to be potted in three inch pots, and early in May planted out in the open border in good, rich garden soil. And rich will be your reward.

THE MOON FLOWER.

Ipomœa noctiphyton—or noctiflora.

I was glad to see the reference made to this most beautiful climber by Mr. Chas. E. Parnell, in the December number of the AMERICAN GARDEN, although I think his method of keeping the old plant over is much more troublesome than perpetuating it by cuttings, which, put in the usual way in October root as freely as Coleus or Geranium, and will, if desired, make plants sufficiently large to fill a six inch pot by the time of planting out in the open ground in May. In my experience of over thirty years as a florist we have never distributed a plant that has given so much satisfaction as this. Its characteristic property of expanding its moon like flowers only at night or in dull days renders it peculiarly interesting.

This night-blooming habit of the Moon Flower was used in a way by the proprietor of a German Lager Beer Garden in the suburbs of Washington a few years ago so as to form one of the attractions of the place.



IPOMŒA NOCTIPHYTON.

He had all the arbors and verandas of his garden covered with it, and advertised it as a great attraction on moon light nights. Flocks came to see it, and were well rewarded, for it is one of the most beautiful sights on a moon light night in autumn to see hundreds of these flowers, like gigantic white butterflies hovering among the green leaves.

During the months of September and October we received scores of letters asking if the plant was hardy, and if not, how to keep it over winter, showing the great interest felt in it. To all such we gave the reply that as it was not hardy in the Northern States the simplest way was to propagate it by slips in the usual manner and keep it over winter with other house plants, setting it out in May at about the time when Coleus and other tender plants are planted outdoors. There is no doubt that it will be planted by thousands of amateurs in gardening next season, as its easy growth enables it to be sold as cheap as almost any other plant in cultivation. Being a climber it requires something to adhere to. It can easily be trained on old walls, fences, or dead trees, or as a covering to exclude the sun on verandas trained on strings or wires nothing is more suitable. Plants set out in May will attain a growth of ten to twenty feet in one season, according to suitableness of soil and location, beginning to bloom in July and continuing without intermission until frost. In Florida, South Carolina and other Southern States it is a hardy perennial, climbing freely to the tops of trees fifty feet in height.

PETER HENDERSON.

DESIRABLE WILD HERBACEOUS PLANTS.

It is always pleasant to note any increase in the popular love for wild flowers. Of late years the demand for them in the garden has increased rapidly, and a number of our formerly neglected wild plants have become garden favorites. There is still abundant opportunity, however, to increase the acquisitions from our fields and woods. Two important difficulties hinder a more general cultivation of wild plants. One is the disposition to slight common objects, and the other is a lack of knowledge as to what are the desirable species. As an aid towards removing this latter difficulty, I subjoin a list of indigenous plants which have appeared to possess strong qualities as I have seen them growing in botanic gardens and country yards for the last few years. The species are all natives of the states lying north of Virginia and east of the Mississippi.

Caltha palustris, Marsh Marigold, "Cowslip." Desirable among other plants for low places where it makes much display in very early spring.

Anemone dichotoma, (*A. Pennsylvanica*,) Large Windflower. I have seen very beautiful displays of this plant in shady gardens. On rich ground it makes a show for a long time.

Actæa spicata, var. rubra, Baneberry, Red Cohosh. The dense spikes of red berries are very showy among other plants. They are very effective in clumps. The white Baneberry (*A. alba*) is less desirable. Both species appear to be easily grown.

Nymphæa tuberosa and *N. odorata*, White Water Lilies. Almost indispensable to a pond, where they may be easily grown. The western *N. tuberosa* is the more showy but the common eastern *N. odorata* is much the more fragrant.

Dicentra Cucullaria and *D. Canadensis*, Dutchman's Breeches and Squirrel Corn. Two very pretty and delicate vernal plants which deserve more general notice. I see the *D. Cucullaria* oftenest although the other is probably the prettiest.

Violas, Violets. Several of the wild Violets are pretty in cultivation, especially *V. pedata*, the Bird's-foot Violet. This succeeds best on light sandy soil. *V. cucullata* makes too large leaves. *V. rostrata* is a very desirable species. I have never seen *V. sagittata* in cultivation, but I see no reason why it should not do well.

Cerastium arvense, Chickweed. In dry shady grounds I have seen this plant making most attractive clumps of bright green several feet in diameter with the white flowers

nearly an inch across, borne in profusion and contrasting beautifully with the dark leaves. Mowing with a lawn mower appeared to do it good.

Hibiscus Moscheutos, Marsh Mallow. Our most showy plant for a swale.

Ceanothus Americanus, New Jersey Tea Produces pretty flowers in abundance but unfortunately they are of short duration.

Desmodium Canadense, Tick Trefoil. In a dry garden I have seen this tall herb making a beautiful clump of light purple. It struck me as being a very desirable plant.

Spiræa Aruncus, Goat's Beard. For masses on dry ground the effect is beautiful.

Oenothera fruticosa, Sundrops. Takes kindly to cultivation on warm soils and makes a display which rivals many of the cultivated Coreopses.

Lythrum Salicaria, Loosestrife. This plant is often cultivated. It takes care of itself and always gives a profusion of light purple conspicuously spiked flowers. Desirable for masses, especially about ponds.

Opuntia, Prickly Pear. This genus of Cacti has some odd and desirable members. I have seen in cultivation both *O. Rafinesquii* and *O. Missouriensis*. They are hardy throughout, and give a profusion of large waxy-yellow flowers.

Aster, Many of the Asters do well in cultivation. They all demand a good soil which is not much effected by drouth. The species which I have noted as especially desirable are named in the following order of preference: *A. Shortii*, *A. spectabilis*, *A. Novæ-Angliæ*, *A. multiflorus*, *A sericeus*, *A. lævis* *A. ptarmicoides*.

The flowers of many *Solidagos*, Goldenrods, are attractive under cultivation but the plants themselves are not often neat and attractive. *S. virgata, var. juncea* is one of the best. *S. odora*, *S. Shortii*, *S. speciosa* and *S. nemoralis* are among the best of the species.

Helianthus, Sunflower. For backgrounds some of the taller species, especially *H. grosse-serratus*, *H. giganteus*, *H. strumosus*, and *H. lævigatus*, are very effective and are at present in good demand.

Campanula rotundifolia, Harebell. One of the prettiest of delicate herbs for dry hillsides and rocky places.

Collinsia verna, A little annual as desirable and as pretty as Phlox. Easily grown.

Monarda didyma, Oswego Tea, Bee Balm. It is a pity that this very showy and ornamental plant is not better known. Few plants excel it.

Phlox, All the species of Phlox would no doubt do well in cultivation. Every one knows the two common species, *P. maculata* and *P. paniculata*. Other species which I have admired are *P. Carolina*, *P. glaberrima*, *P. subulata* and especially *P. pilosa*.

Asclepias tuberosa, Butterfly Weed, Pleurisy Root. Probably the most showy of our native herbs. It is an acquisition to any garden.

Polygonatum giganteum: Solomon's Seal. Much grown in Europe.

Lilium Canadense makes a very fine display in cool shady places, although I have sometimes seen it doing well in the open sun. I have never seen our other native Lilies extensively cultivated. L. H. BAILEY, JR.

ASTILBE JAPONICA.

Hoteia and *Spiræa Japonica* are synonyms of this beautiful hardy perennial plant which constitutes one of the most pleasing ornaments of the herbaceous border. But since it has been found that it is also excellently adapted for forcing, it has become one of the most favorite winter flowering plants, and is grown by the hundreds of thousands by our florists. All that is necessary for

ASTILBE JAPONICA.

forcing is to take up some clumps, divide them if too large, pot in rich soil, keep them moderately cool at first, and when wanted to bloom remove to a warm, light place. Its compact habit, the fresh green color of its leaves, and its elegant, graceful spikes composed of multitudes of minute white blossoms make the plant especially suitable for dinner table decorations, vases and loose bouquets.

WIGANDIA CARACASANA.

For the production of massive tropical effects this plant is invaluable. It is of luxuriant growth, attaining a height of six

WIGANDIA CARACASANA.

to seven feet in one season; its leaves grow to immense size, in rich soil three feet long by fifteen to eighteen inches wide, they are beautifully veined, and ribs and stems covered with crimson hair. The plant is perennial, but for decorative purposes it is best grown annually from seed, as old plants lose their luxuriant appearance. The seed should be sown in heat as early as possible, the young plants potted and re-potted as required, and transferred to the open ground at "bedding out" time. They require very rich soil and an abundance of water. The Wigandia is not a new plant, but probably unknown to many of our readers who could employ it to excellent advantage in their gardens.

HYBRID PERPETUAL ROSES.

To grow Roses to perfection is high art indeed, and those who aspire to it should carefully study the method of those who excel, and adapt their methods to their own conditions. *Capt. John B. Moore*, President of the Massachusetts Horticultural Society, is justly recognized as one of the most experienced and successful Rose growers in the country, his advice is therefore of great practical value to every one interested in the "Queen of Flowers."

Mr. Moore said that he had cultivated Roses with great interest, and from their beauty and fragrance had received more real pleasure and enjoyment than from any other flower that he had grown. The land on which most of his Roses are planted has a slight inclination to the south; the soil is a sandy loam with a loose sandy subsoil, and most of it is quite dry. It would be considered unsuitable for Rose culture, but it was conveniently situated for the purpose intended, though not such as he would have chosen could he have done better. The chief fault was that it was subject to drying up too quickly; but it had excellent natural drainage,—too good, indeed.

The remedy applied was a dressing of a material often found in sand banks and improperly called marl, but really a dried or consolidated quicksand. It looks like clay and is as hard to excavate, but, unlike clay, when dried it readily falls to pieces, and the particles are finer than common flour. About one inch in thickness was spread on the Rose border when dry, and worked in with a harrow and cultivator, and every rain carried the minute particles into and intermixed them with the soil, changing it from a porous, leachy, to a retentive soil, fairly suitable for the purpose intended. There was then applied a dressing of stable manure at the rate of ten cords to the acre; this was ploughed in very deep, and the land afterwards levelled with a harrow, which completed the preparation of the land for the planting.

The Roses were then planted in rows four feet apart and three feet apart in the rows, so as to work between them with a horse. One-year-old plants, mostly on the *Manetti* and brier stocks, were chosen; part were set in autumn and part in spring, but both succeeded equally well. The after cultivation has been to keep the ground clean and free from weeds, and in the fall to bank up the plants about a foot high with earth from the spaces between the rows. When the earth is removed from around the plants in spring they are pruned, the weak, poor wood being cut out, and the slow-growing varieties cut back to six or eight inches, while the stronger growers should be left ten or twelve inches in length. In giving water to Roses or any other plants, there is no better way than to imitate Nature and wet the land thoroughly.

The Window Garden

AND GREENHOUSE.

THE WINDOW GARDEN FOR JANUARY.

In practical gardening January is the most inactive month of the year. Covering up and mulching out-of-doors have been finished; indoors our plants are in their winter quarters. Zonal Geraniums, Carnations, Speciosa Fuchsias, Abutilons, Oxalises, Paris Daisies, Nasturtiums, Sweet Alyssum, and may be some Callas, Begonias, Pansies and Violets are in blossom in our windows; and Pansies, Violets, Alyssum and Meteor Marigolds in our cold frames. Window plants need attention in watering. Give liberally to those in rapid growth, as Callas, Carnations and Primroses, and sparingly to those more inactive. Keep plants free from insects, and remove dead leaves or decaying parts of stems or leaves; never allow fallen leaves to lie on the fresh ones, as they are apt to rot them. Stake and tie up your plants as they need it. If the leaves get dirty, sponge them gently with soft soapy water. Do not repot any plants this month, unless you have sufficient accommodation for them, or the condition of the soil in the pots by reason of worms or other deleterious cause, should render it advisable; if their being pot-bound is all that ails them, let them alone. Ventilate a little every warm day, and even in frosty weather while the sun is shining brightly on the windows a little ventilation may be given.

COLD FRAMES.

A variety of flowers and vegetables may be contained in these. Keep them well wrapped up in severe weather, and in the case of plants in bloom, as Daisies, Pansies and Violets, in favorable weather or while the sun is shining on them, remove the mats or other wraps used to put over the sashes and ventilate a little. But in the case of Anemones, Polyanthuses and others not in bloom or required to come in early, they may be left covered up for days, sometimes weeks together, in hard frosty weather. I find dampness does more mischief than frost in cold frames.

I have a multitude of plants in cold frames, and which I wish merely to winter safely—for instance, Strawberries, young Roses, Rose cuttings, Polyanthuses, late Pansies, Hydrangeas, very young Evergreens, Irish Ivies and bulbs of sorts. When their leaves and stems were perfectly dry, and the surface of the ground dry, I spread some quite dry Oak leaves over them loosely, about three to five inches deep, and put on the sashes to keep them dry. Endive fit for use, Spinach, Leeks, young Lettuces (but not any approaching maturity), Chives, Parsley and Cabbage plants I also treat in the same way. So long as the leaves and plants can be kept dry, so long are they safe; they are not subject to rapid fluctuations of temperature, and do not require nearly so much attention as in the case of frames whose wrapping is outside the sashes. But frames containing Radishes, heading Lettuces, and also hotbeds generally, should be covered for protection from the outside only.

The well-known and very useful cold-pits are like sunk greenhouses, have no fire heat, and must be kept frost-proof by outer coverings. Tender Conifers, English Hollies, Camellias, Azaleas, Myrtles (not the Periwinkle, but the aromatic evergreen shrubs) and the like, are wintered safely in cold pits, and when placed on shelves or a staging near the glass, so, too, may be Geraniums, Carnations, Cinerarias, Fuchsias and the host of other plants so familiar in our windows and cool greenhouses. Cold pits are apt to be damp and the atmosphere musty, and many soft-leaved plants, as Geraniums, Begonias and Heliotropes, suffer considerably in consequence. The remedy is vigilance in cleanliness, timely and abundant ventilation, and keeping plants and pit as dry as possible consistent with the nature and welfare of the plants contained in it.

SLIPS.

Cuttings, as gardeners say,—yes, I know some gardeners who even make a distinction between the two, but I question if they can prove it,—may be made at any time of year, providing we have proper conveniences for them. In the window garden we do not look for any special convenience for rooting slips in winter, nevertheless, I would advise you to plant a few slips,—dibble them into the earth in the pots containing the old plants. If they grow, it is a gain; if they perish, the loss is little. When you cut in, pinch back, or break off accidentally a shoot, don't throw it away, but make it serve as a cutting. O, Carnations any way dibble in a few slips; they may take several weeks to root, but most of them are likely to live and afford you strong plants to set out next April or May. If you wish to increase your stock of Roses, shrubs, or Grape vines, go out-of-doors, cut off some good, firm young shoots, cut them into 6-inch lengths, tie them up into little bundles according to their kind, and bury them in a box filled with moist sand, earth or sawdust, and keep them in a cool cellar or building till spring. When planted out thickly in close rows, most of them should grow. WM. FALCONER.

A MINATURE HEATING APPARATUS.

Many minds seem to be engaged in solving the problem of inexpensive heating apparatus for small plant houses, but it is the amateur plant growers, not the professional manufacturers. The latter appear to have a singular aversion against so insignificant a thing as a small plant house. Yet we have no doubt that a fortune awaits the man who invents and will manufacture a cheap, easily managed heating apparatus for small greenhouses.

In former numbers of the AMERICAN GARDEN, we have given various plans for their construction, but for cheapness and simplicity the following one constructed by our friend, Mr. N. T. Lackner, is not excelled by any we have yet heard of. To a discarded wash boiler, he says, I have attached a top terminating in a 3-inch pipe. The pipes are made of zinc soldered together so as to be perfectly water-tight. The top pipe runs to an expansion tank at the south end of the house, from which the return pipe leads back to near the bottom of the boiler. The north side of the house remains without bottom heat which condition, I find, suits some kind of plants perfectly. The boiler rests upon a brick and cement-lined pit in the center of the house near a cellar window; and boiler and pipes together hold only fifteen gallons of water. A one-inch pipe connects the pit with the open air.

The heat is furnished by an oil-stove with two four-inch wicks, and by burning only one, or both at the same time, I can regulate the temperature as desired. For a larger house, a stove with four wicks would no doubt work satisfactorily. All my plants, seedlings and cuttings included are doing remarkably well, and are all that any amateur could desire. This leads me to the conclusion that oil-stoves can be used for heating green-houses, without the least detriment to plants.

RANUNCULUS AND ANEMONES.

As garden flowers these beautiful plants have never met with much success in the northern States, our winters being too severe for them, but in frames or pots in the house they may be brought to high perfection. Their prevailing colors are scarlet, rose, white and blue. The roots are a solid, flattened mass, and may be planted at any time, three or four in a five to six inch pot They require very rich soil, good drainage and a general treatment similar to that of Dutch bulb.

Nos. 1 and 2, in our illustration on the following page represents the double forms of Ranunculus, No. 3, Double Anemone and No. 4, the Star Anemone.

FASHIONABLE FLOWERS AND DECORATIONS.

Floral decorations like flowers, have their period of being fashionable and then decline, to give place to a new fancy. It requires two years for a flower to reach the zenith of popularity; the third season it is usually thrown into the shade. The run on yellow flowers began with the partiality for *Calendula Meteor;* this blossom was all the rage for two seasons; it indirectly brought in favor yellow Roses, which were combined with those of every color. A cluster of yellow flowers was, in fact, indispensable in the *made* bouquet or corsage bunch. But a very few years since it would have been considered shocking taste to combine red and yellow Roses; the yellow flowers hold their own in the Rose varieties, but the Calendulas with their gorgeous color, are now despised, and are thrown out by growers because their day is past.

For two years *Catherine Mermet* Roses were in high favor, but they have now settled down with *La France, Cornelia Cook, Niphetos, Jacqueminots* and half a dozen other varieties, into standard Roses of admirable qualities, but the furore for them no longer exists, in this country at least.

HOLIDAY SURPRISES.

It is well understood by metropolitan florists that they must constantly introduce novelties in flowers, their arrangment, and in decoration, to control the custom of those who lavish money in the perishable greenhouse beauties. During the holidays plantsmen bring in their surprises, about which they have kept profound secrecy. At Christmas and New Year's they can demand a large price for specialties, all blossoms at that time are costly, and novelties bring preposterous prices. There are two or three leading florists who will pay fabulous sums for wild flowers, forced in mid-winter. A few stalks of Sweet Clover bloom—or sprigs of Buttercups that would be trodden down

ruthlessly in the field during summer, can be sold for thirty-five cents a flower during the holiday week.

FLORAL BOXES.

Equisitely arranged boxes of cut flowers were more fashionable floral gifts this season at Christmas and New Years' than tied up bunches or designs. Charming taste was shown in those boxes, many of which were satin lined in pale tints. There were boxes in "blue," and those in "pink," and some in "gold." The "blue" boxes were of satin paper, lined with satin or plush of delicate blue shade. Violets, from the pale *Neapolitan*, to the rich purple *Czar*, were laid so that the shading was perfect. Nestling in one corner of the box would be a small cluster of *Swanley White* Violets, or a few Clover blossoms to give *chic* to the effect. "Pink" boxes were filled with Rose-buds, and "gold" boxes contained *Maréchal Neil* and *Perle des Jardin* Rosebuds, Butter-fly Orchids, and a knot of bright Buttercups.

BOUQUETS.

The style of hand-bouquet in vogue this winter, is loose and large. From four to five dozen Roses are bunched together, with *Adiantum gracillimum* or *Asparagus plumosus* for foliage and fringing. The small compact bouquet with a Camellia in the centre, and edged with brakes, such as was made a decade ago, would be ridiculed at this time, when only a quantity of rich Roses and rare foliage gives satisfaction for either carrying in the hand or wearing in the belt. What is known by florists as the French corsage bouquet is fashionable for wearing to the opera, where a lavish display is made. The bunch is made of Rosebuds or Carnations. It begins with *Bon Silene* buds at the shoulder, and gradually expands from one to twelve flowers: when made in pink, *Mermets* follow *Bon Silene* then *La France*, and at the waist come the hybrids *Anne de Diesbach*, and *Magna Charta;* when made in white, *Niphetos*, *Cornelia Cook* and *Maréchal Robert* Roses are used, in combination with the dainty Lily of the Valley and delicate Narcissus. The English style of decorating with plants grows in favor every year. Only specimen plants can be used for this purpose where they receive close scrutiny, and for this reason great improvement in plants both large and small is noticed in the extensive chains of green-houses built in suburban places. The most delightful effects are made with Palms, Tree Ferns, and exquisite foliage plants of many varieties.

WEDDING RECEPTIONS.

A large mansion on Fifth avenue, was recently decorated for a wedding. The corridor looked like a Fern lane, as it had Tree Ferns in tubs placed in every eligible position. Plaques of growing Ferns were hung on the walls, over the doors and at the top of the mirror. On the newel was a large specimen *Adiantum Farleyense*. The mirror was garlanded with *Lygodium scandens*, and the stairway with Smilax chains. At one end of the corridor was an alcove for musicians, behind a high Ivy screen.

TYPES OF RANUNCULUS AND ANEMONES.

Bermuda Lilies, which have been brought in unusually early this season, were used admirably in the adornment of the drawing-room. Smilax was mossed in arches over the doors, and in it were plunged these graceful Lilies. At the end of the room where the bride stood, a veil of Lily of the Valley was looped. It is estimated that the sprays of Lily in this veil cost $800. It was edged with *La France* Roses. In the grates were delicate ferns and blooming plants of *Poinsettia*. The mantel-piece arrangement was highly effective. There were vases of *La France* and *Duke of Connaught* Roses at each end. Passion flower vines were brought from these in festoons to a plaque of Lilies at the center of the mantel mirror frame. The chandeliers were decorated with Butterfly Orchids which seemed to dance about the light.

The bride wore Lily of the Valley, and carried a large bunch of it. Her bridesmaids wore silk tulle over white glacé silk; there were six of them. Their only ornaments were necklaces and bracelets of *Asparagus plumosus*.

COMPLIMENTS OF THE SEASON.

It is the custom this year for ladies to send flowers to one another, and to leave a nosegay when they pay visits. Several very lovely floral gifts have been sent to new babies the day after their birth. A tiny pair of white silk socks were caught with a stitch together. In one was placed Lily of the Valley; in another Forget-me-nots, among which was a Moss Rose bud. An embroidered blanket was sent to another little stranger, filled with Daisies. Straw cradles, filled with spring flowers are favorite gifts for new comers. It would seem that every sentiment may be expressed with flowers and the fact is taken advantage of by many people in a pleasant and praiseworthy manner.

Various elaborate designs have been made for private orders. The English Holly and Mistletoe has been sold to eager purchasers. The former cost from 25 cents to $5 a bunch. Boughs of the latter, brought from 50 cents to $10 according to size. Prince's Pine is preferred for roping, as it holds its needles better than other evergreens. FLORA.

Lawn and Landscape.

FLOWER BEDS IN LAWNS.

To those who grow a miscellaneous collection of flowers for the satisfaction of watching their growth and peculiarities of transplanting and puttering and weeding, any rules or suggestions are superfluous. The more unique, miscellaneous or odd such collections appear to the educated gardener, the more precious they are often to their owners, and as long as they give satisfaction to their owners; familiarize them with plant growth, and take them out of the tread mill round of every day life, it is really no ones business where one locates them or whether they are exactly in accordance with rule of thumb or not.

There is, however, as the country becomes more densely settled, and the towns spread out, a growing desire for harmony of surroundings and any rules that can be given toward making the flower bed a part of a harmonious whole will be welcomed by many. As in other matters of taste the fitness of things is always a true guide, and the question whether the varieties planted best fulfill the object wished for, is to decide the matter in this case.

For example, the larger Dahlias, Zinnias, Sunflowers, Double Hollyhock, Double Poppy, Peony and Tiger Lilies are attractive and showy at a distance, or on the borders of a shrubbery while they have little to recommend them for planting close to the house or near a much used walk. Even the beautiful Japan Lilies are unsuitable as lawn plants and Gladiolus and Tuberoses equally so. Their proper place is in separate beds—in the vegetable garden if no other ground is available—to be cut for the parlor and hall for which purpose their long keeping qualities make them specially adapted. For small lawns kept closely shaven nothing is better than small beds containing a few choice Verbenas, or a bed of Portulacas or small and tasteful designs in Alternantheras or the trailing Dusty Miller.

Perhaps some one will ask what a tasteful design would be like, which question I cannot answer better than by giving an illustration or two:

In front of a church in a neighboring city are two grass plats ten feet square. In each of these plats is planted every summer a Scarlet Geranium bed bordered with Centaurea. These beds are nine feet in diameter and the grass around them bears about the same proportion that the corners of a square clock-face bears to the dial. How much prettier and more in harmony with the surroundings would be two Greek crosses not more than three feet long, and consisting of two shades of Alternanthera, than these monstrous beds appropriate only for extensive lawns.

Two or three times a week in summer, I pass a city residence where to the left of the path as one enters, is supposed to be a square rod of lawn; out of this grass plat is cut a huge five-pointed star planted with Coleus. So anxious is the owner to make this star as large as possible, that there is hardly room enough left to pass between its points and the fence. Now such a star in the center of a circular carriage turn a hundred feet in diameter might be tolerable, and there are other conditions under which it could be made an object of beauty, but as an ornament to a square rod of city lawn it is simply absurd.

During a short stay at Philadelphia I visited Girard College, and walking through the front lawn I noticed as its leading feature a great number of highly colored beds of regular but diverse patterns composed of Coleus, Alternantheras and other bright plants. The eye became soon wearied of these numerous monotonous beds and I naturally questioned the taste displayed. But when after passing through the building I had reached the wonderful roof, shingled with marble slabs five inches thick, and when after gazing awhile at the outspread city of Brotherly Love my eye fell upon the lawn below, then the exquisite work and skill of the gardener became apparent. Like in a picture the individuality of the plant melted in the perspective. The effect was indescribably grand, neither the choicest mosaic table nor the costliest carpet could be more beautiful.

The arrangement of flower beds in lawns with regard to their principal point of view deserves the careful study of the landscape gardener and will be reserved for another article. L. B. PIERCE.

TRANSPLANTING TREES IN WINTER.

As a rule there is not much gained by planting large trees, smaller ones, well taken care of, give generally better satisfaction. Yet there are cases in which it becomes desirable to plant as large trees as is practicable, even if it has to be done at considerable expense and labor. To those so circumstanced the following directions by a correspondent of the *Dutchess Farmer*, may be of interest:

When properly done, the holes should, of course, be dug when the ground is not frozen, and the soil placed in a compact heap, and covered on the south of the hillock with some coarse litter from the horse stable, to keep a portion of the soil from freezing, which will give the planter access at any time during the winter. Sufficient loose soil to pack about the ball of earth will be taken up with the tree, which will be nearly sufficient of itself to fill the receptacle, and the dressing will be just where wanted to spread about the tree for winter protection, and for immediate nourishment in the spring. Experience has taught me that it is highly needful to furnish some fertilizer for all transplanted trees at the time of removal. In balling out trees, it is not advisable to wait until the ground is frozen hard, as is often done, which greatly increases the labor and expense.

It is only necessary to dig a narrow trench about the tree, which may be quite near the trunk; the soil being damp will be held by the many fibrous roots from falling into the trench, which should be deep enough for cutting down through the horizontal roots, which, with most trees, will require a depth of from fifteen to twenty inches, laying bare the top roots. Having dug about all the trees in like manner, all you have to do is to wait until the ball of earth is frozen, when you have only to chop off the main perpendicular root, and, with the trunk for a lever, two men can readily load upon a stoneboat or sleigh, a tree, with ball of earth attached, as heavy as a team can haul. When arrived at the place of setting, drive the boat or sleigh upon the heap of soil in such a manner that it will incline toward the pit, and in a moment you may slide the tree to its appointed place.

Tramp some of the soil from under the dressing around the ball of earth; put the litter about it, and the work is done much better than it could be at any other season of the year, for the multitude of fibrous roots in the ball of earth preserve the tree from any check until the larger roots can throw out a colony from the points where they were cut off. There is no necessity of losing one tree in a hundred by this method, while a large tree can be removed with as much safety as a small one, providing the ball of earth attached be correspondingly enlarged. This method is exceedingly favorable for the resetting of large evergreen trees, which otherwise is attended with much danger of loss from the least drying of the roots. It is a work well adapted to the winter, as it can readily be discontinued at an inclement season, to be resumed at any favorable moment.

WINTER COLORING.

By a proper use of the means at our command, we may have color in the garden all winter, and any one knows the pleasing effect a slight amount of warm coloring gives when seen in a winter landscape, whose tones are always low. The Bittersweet, a native climber, has clusters of orange and scarlet fruit, which when seen against a background of evergreens has all the beauty of flowers. Our native Sumach can be used most effectively in combination with evergreens, its large crimson clusters contrasting vividly, and brightening the scene. Evergreens are sombre when used alone, but a point of warmer color seems to enliven them, as a scarlet flower worn with a black dress makes it almost brilliant.

We have several native shrubs bearing showy scarlet berries, and every one of these can be grown in the lawn or shrubbery if proper care is taken in transplanting them. Of course, the more nearly you imitate their surroundings, and their conditions of growth in their native haunts, the greater the success. Study the plant and its habitat, and when you remove it make the change as slight as possible. If it loves fibrous soil, rich in leaf-mold and decomposing woody matter, bring some along to put about its roots. If it seems fond of shade, do not plant it in unshaded places.

Those who are not so fortunate as to be able to get these plants from field, wood and swamp, can procure many varieties of desirable native shrubs of nurserymen, who are beginning to recognize the beauty and worth of our own plants. We have native shrubs and flowers quite as beautiful as those we have paid high prices for, from foreign lands, but we have neglected them shamefully. If some of them had been advertised as coming from Japan, and sold at $1 to $5 a piece, everybody who grows flowers would have been ready to purchase. Never despise beauty because it is to be had cheaply.—*E. E. Rexford in Our Country Home.*

If you see any way in which THE AMERICAN GARDEN can be made more interesting to you, please let us know how.

Foreign Gardening.

ORCHIDS IN PARA.

(Continued from our last number.)

Leaving the house, we found the Orange-trees along the path hung with Orchids, all growing on blocks and long bars extending from tree to tree, hung thick with vigorous plants. There seemed to be no attempt at classification by position; Cattleyas, Stanhopeas, Laelias, Brassias, Oncidiums, and other Orchids of the Western Hemisphere mingled promiscuously with Vandas and Dendrobiums from the Eastern. But each plant, except those which were in large numbers and easily distinguished, such as *Cattleyas El Dorado* and *superba*, *Oncidium Lanceanum*, *Schomburgkia undulata*, and others, has a numbered leaden label attached. The numbers refer to a book in which is written the whole history of each plant. The numbers of the species already reach nearly four hundred and fifty, and constant additions are being made.

A mass of about forty plants of *Miltonias spectabilis*, *candida*, *cuneata*, and *Clowesii*, mostly showing bloom, attracted our attention by their vigorous growth and healthy green foliage. Not a plant showed the yellow shade of leaf which is so general in *Miltonias*. The fence on our right was hidden by masses of *Cattleya El Dorado*, and we noticed many good plants of *Laelia Perrinii*, while the Orange-trees near the wicket-gate were draped with the pendulous stems of *Dendrobium superbum* and *Pierardii*.

Close to the gate were two large tubs of a very stately Orchid, *Epidendrum paniculatum*, the stems five feet tall, and just showing bud. Entering the wicket, we found the fence on both sides, to the end of the orchard, a mass of Orchids, and on poles reaching from tree to tree were baskets containing the rarer species, among which we noticed in fine growth *Cattleyas marginata*, *pumila* and *Skinneri*, *Laelia Dayana*, *Leptotes bicolor* and *Dendrobiums chrysanthum*, *Wardianum*, *macrophyllum giganteum*, *crepidatum* and *pulchellum*, but only *chrysanthum* was in bloom. Some large tubs contained plants of *Crytopodium punctatum* and *Andersoni*, and there was a specimen *Galeandra Devoniana*, which to see was worth our walk. The stems were as thick as one's thumb, six feet high, and bent with the weight of great panicles of bloom; we counted twenty-five on a single stem, each flower two inches in diameter by actual measurement.

A large Abio tree was hung with *Scuticaria Steelii* and various rush-leaved *Brasavolas*, and all the posts which support the covered tables of foliage plants were likewise hung with Orchids. One of the loveliest of Orchids, of which we saw fine plants, is *Ionopsis paniculata*, which spreads a rosy cloud of blossom, the panicle of flowers often larger than the whole plant. Away from the shelter of the trees were some tables of Orchids in pans, among which were fine specimens of *Cattleyas lobata*, *Dowiana*, *Leopoldi*, *Mendeli bicolor*, *labiata intermedia*, some good *Vandas*, *Æridos* and *Saccolabiums*, and very vigorous *Calanthes* and *Phajus*.

On some of the trees were large masses of *Camaridium ochroleucum*, a very pretty, white-flowered, fragrant Orchid, and of *Rodriguezia secunda*. Hardly distinguishable from the latter in foliage were fine plants of *Burlingtonia fragrans*, the best of the family, which were just showing bloom. Some large plants of *Dendrobium Dalhousianum*, seen by their strong growth and signs of former flower to have taken mildly to the climate, and a long line of Vandas and Saccolabiums in baskets were throwing out roots into the air in every direction.

The collection is very weak in Cypripedia, of which we only saw *C. longifolium*, *Roezli*, and *Spicerianum*, the latter a new arrival. Of Chysis, Stanhopeas, and Coelogynes there were plenty; but Angraecums, Odontoglossums, and Masdevallias were almost wholly wanting, the two latter because the climate is too hot for them. For the same reason Senhor Olinda has lost all his *Cattleya citrina*, *Laelia majalis*, and *Lycaste Skinnerii*, and for some inexplicable reason *Dendrobium nobile*, and *Cattleya Mossiae*, of which there are many plants, do not thrive.

The Phalaenopses, though few in species and number, were in wonderful health. The best was *P. Schilleriana*, the foliage as large as one's hand, very richly marked, and carrying a spike of bloom four feet long. Of choice little plants there were many, such as Premneaeas, four species of Sephrenitis, *Oncidium articulatum*, and *Liminghei dasytyle* and *uniflorum*, Leptotes, Paphineas, and Aganisia.

Zygopetalums were represented by *rostratum* and *maxillare* in many varieties, and by the larger growing *Mackayi*, and there were a host of Epidendrums, chiefly valuable for the profusion and fragrance of flower rather than for color.

Time fails us to give a description of all that we saw; in so large a collection something new is developing every day, and thus the attractions are ever new.

As to the care required we may say, as when describing the foliage plants, it is reduced to a minimum. For nine months in the year no watering is necessary, and a good syringing in the morning suffices to keep the plants in good health the other three. The great care is the potting, basketing, or blocking of the plants; when they are once hung up the kindly climate does the rest. Of course, there are annoyances; slugs and grasshoppers sometimes do mischief. We saw a long stalk of Dendrobium from which every bud had been stripped the previous night, and Senhor Olinda was lamenting a choice plant of *Neottia orchioides*, which a grasshopper had eaten completely off.

But the annoyances are small, compared with the pleasure, and we are fully convinced that Para offers every attraction to the amateur in Orchids.

PARA, Brazil. E. S. RAND.

A WONDERFUL ISLAND.

NEVER THE SIGHT OF A PLOWED FIELD NOR THE SOUND OF A BROOK.

It is curious to think that, in the country where vegetation never dies and everything is perpetually green, the people have never seen a field of grain or a hay-stack; have never watched the earth turned over and under by a plow; never heard the click of a harvester or the hum of a brook, or watched the flow of a river. These things are unknown in Nassau, says a correspondent of the *N. Y. Times*. No grain is raised there; there is no field big enough to make it worth while for one thing, and where the land has been cleared and broken and made productive it is too rich in its capacity to raise more valuable things. There is very little grass. Here and there are little patches of it, but almost always where it has been sown and carefully cultivated. All the flour used has to be imported. As most of the horses come from America, so their hay and feed is taken from here, too, except such green stuff as they pick up incidentally. Our modern farm machines being unnecessary there, are unknown and unheard of.

There are no rivers, and in traveling over almost all parts of the island of New Providence I do not remember to have seen even the smallest brooklet. But it is anything but barren, anything but desolate. Take a field there that is nothing but a solid mass of coral rock and limestone, and, if let alone for a year or two, it becomes so covered with all sorts of vegetation that no man could tell whether the bottom of it was sand, or clay, or rock, or what. If land is not carefully cultivated all the time, it soon disappears beneath the growth of trees and bushes. A barren rock in less than two years becomes a flower garden, if let alone. It is a common saying that the land has to be tilled with a pickaxe, and trees and vegetables set out with crowbars. There is good clay soil on some parts of the island. Some of the Pine-apple fields were of rich red clay, strong enough to raise grain or anything planted in them. But they were exceptions. Only here and there this red clay is found, and all the rest is rock.

THE GARDEN OF EDEN.

"Gan-Edan,—an inclosed garden, from the Greek 'gan,' to protect or defend, and 'oden' or eden, pleasure or delight,—or Paradise, is," says Louden, "supposed by some to have been situated in Persia; by others Armenia; and by others Chaldea, on the north of the Persian Gulf, near the present Bassorah, the Euphrates dividing there into four streams, in the manner mentioned in holy writ. Buckingham tells us that the people of Damascus believe implicitly that the site of Paradise was at El Mezey, near that city, now a favorite place of recreation of the Turks. The waters of the Tege and Barrady, which supply numerous fountains of Damascus, divide there into four streams, and these they suppose to be the four rivers of Moses.

The inhabitants of Ceylon say that Paradise was placed in their country; and, according to the Rev. Dr. Buchanan, they still point out Adam's bridge and Abel's tomb. Sir Alexander Johnston informs us that they also point out, as the tree which bore the forbidden fruit, the Divi Sadner, or *Tabernæmontana alternifolia* of botanists. For confirmation of this tradition, they refer to the beauty of the fruit and the fine scent of the flowers, both of which are most tempting. The shape of the fruit gives the idea of a piece having been bitten off; and the inhabitants say that it was excellent before Eve ate of it, though it is now poisonous. Many other fanciful opinions have been given respecting the site of Paradise, and a Swedish professor in the seventeenth century wrote a book to prove it was in Sweden.

Exhibitions & Societies.

WESTERN NEW YORK HORTICULTURAL SOCIETY.

The Thirtieth Annual Meeting of this Society, of which P. Barry is President, and P. C. Reynolds, Secretary, will be held in the Common Council Chamber, in the city of Rochester, commencing January 28th, at 11 o'clock, a. m. Farmers, Fruit Growers, Nurserymen, Gardeners, all who are interested in horticultural progress are cordially invited to attend, and will be free to participate in the discussions. Delegates from sister societies in this and other states are invited, and will be cordially welcomed.

The proceedings will, as usual, embrace reports of standing committees, county committees, discussions on a great variety of subjects, including the leading horticultural topics of the day, besides practical and scientific papers by John J. Thomas, Prof. G. C. Caldwell, Dr. J. A. Lintner, Dr. E. Lewis Sturtevant, Daniel Batchelor, David Wing, Simeon G. Curtice, and other gentlemen of great experience.

Contributions of new or fine specimens of fruits, flowers or vegetables, new implements or other objects of special horticultural interest are solicited for exhibition. The hall will be open at 10 o'clock to receive them. Articles from a distance may be sent by express to the Secretary.

The annual fee of membership is one dollar; life membership ten dollars. Those who cannot attend may remit to the treasurer.

The proceedings are published annually, immediately after the meeting, and furnished free to all members.

MICHIGAN STATE HORTICULTURAL SOCIETY.

The report of the Annual Fair of this society, like everything from the pen of the society's genial and accomplished secretary, *Mr. Chas. W. Garfield*, is full of interest, and gives many valuable hints to those in charge of horticultural exhibitions. Experience without deductions and conclusions is of no value, and benefits no one, and this is one of the reasons why so many of our horticultural and agricultural exhibitions do so little good. Secretary Garfield, in order to make each fair better than the preceding one, sums up the lessons of the past fair as follows:

1. Tables are infinitely superior to shelving upon which to show fruits.

2. A clasp in which to hold the name card well above the fruit is a great help to observers.

3. Either the fairs should be held longer, so that people will not come in so large numbers upon a single day, or accommodations for a large crowd to see and study the displays without hindering others should be given.

4. Exhibitors of collections should have their fruit so packed and lists so made out that their exhibits can be put in shape in at most half a day after reaching the ground.

5. Every possible convenience should be given committees for rapid and systematic work, and the securing of a tasty exhibit with these conveniences is a problem well worth the study of fair managers.

6. Exhibitors should have made such a study of the premium list as to know exactly their places of entry and procedure before they reach the ground.

7. All unworthy varieties should be rejected, unless they are shown for the purpose of educating people as to what they do not want, which fact should be made conspicuous to observers and committees.

8. Committees cannot afford to make awards without placing upon record the argument which led to their decision; the same to be printed with the list of awards.

9. A place in the hall should be devoted to those seeking names of fruits where all such can be placed under proper supervision, and the committee on nomenclature give the desired information on cards made for this especial purpose.

10. More attention should be given to the securing of exhibits by amateur growers of plants and flowers.

NEW YORK HORTICULTURAL SOCIETY.

The December exhibition of this society was held on the 3d of the month at Horticultural Hall, No. 26 and 28 West 28th street.

Chrysanthemums formed again the leading feature, Hallock & Thorpe's plants and cut flowers covering one of the large tables running through the entire hall, and Peter Henderson's another. The first premium was awarded to Hallock & Thorpe, but Peter Henderson's exhibit was so equal to theirs in excellence that, if in their power, the judges should have given a first prize to both of them.

Wm. K. Harris of Philadelphia, exhibited a large collection of Chrysanthemums imported directly from Japan, some of which were exceedingly beautiful; a single flower measured seven inches in diameter. The amateur prize was awarded to John Farrel.

John Henderson's collection of Roses attracted deserved attention. It comprised all the leading varieties of the season prominent among them the beautiful Madam Cusin.

The special prize for the Sunset Rose was awarded to W. K. Harris.

Chas. E. Parnell's collection of cut-flowers was much admired, as it contained many beautiful older plants seldom seen among florist's flowers.

J. T. Lovett exhibited an interesting collection of Japan Persimmons.

Bird's new Mignonette, a bunch of which was shown, has immense flower spikes, the largest we have ever seen.

In addition to these there were Geraniums, Carnations, Pansies and, in fact, representatives of all the leading flowers of the season, making the hall as bright and fragrant as a spring morning.

AMERICAN INSTITUTE FARMERS' CLUB.

This time-honored club, which was one of the first agricultural organizations in the United States, and which for many years exerted a powerful influence on our agricultural development, will probably be remembered by many of our readers. For some years past but few practical men took any interest in its meetings, which in consequence dwindled into insignificance. Recently however, the most active former members together with a number of other progressive agriculturists reorganized the club under the presidency of Dr. F. M. Hexamer, and Mr. D. R. Garden as Secretary.

The first meeting under the new management, held on December 9th, was well attended, every seat in the large room being occupied, showing how heartily the public is in sympathy with this movement. New York, the metropolis of our continent, and the center of our agricultural commerce seems to be pre-eminently the place for a representative organization of this kind, and nowhere else is it more important that the various relations between the producer and consumer be properly understood than here. It is also proposed to devote a considerable share of attention to market gardening, pomology, floriculture, rural life, and all branches of horticulture.

The Sheep industry in the vicinity of New York, the principal subject for the day, was introduced by Mr. James Wood of Mount Kisco, Westchester County, N. Y. In an excellent address the speaker explained the advantages of sheep raising over dairying and other farming specialties, within a distance of from fifty to a hundred miles from this city. He then stated the results of his own extensive experience in the management of sheep and the comparative value of the leading breeds. The address was listened to with great interest, and Mr. Wood obligingly answered the many questions put to him by persons in the audience.

To give additional attraction to these meetings, it is also proposed to invite exhibits of agricultural and horticultural products of special merit. As a beginning, the editors of the *Rural New Yorker* placed on the table several monster potatoes, which were probably the largest perfect-shaped specimens of which there is any record. One of them, an Early Victor, weighed four pounds and-a-half, and another, a Rose Potato, was of nearly the same weight. Mr. J. T. Lovett of Little Silver, N. J., exhibited a highly interesting collection of several varieties of Japanese Persimmons. A tree growing in a tub, not over three feet high, was loaded with brilliant fruits, and presented an attractive appearance. Several varieties of Apples and various seasonable flowers were on the table.

The second meeting was held on December 23d. Mr. E. Williams delivered a most instructive address on Pruning Grape-vines, of which we shall speak in a future number. Among the speakers announced for the coming meetings, are: A. S. Fuller, P. T. Quinn, Maj. H. E. Alvord, Gen. Marey, J. S. Woodward, Dr. B. D. Halsted, Col. M. C. Weld, J. T. Lovett, J. H. Hale, J. B. Rogers, P. B. Mead and others.

Regular meetings are held the second and fourth Tuesdays of each month at 1:30 p. m., in room 24, Cooper Union, New York. All persons interested in Agriculture and Horticulture, ladies as well as gentlemen, are invited to attend.

THE NEW ORLEANS EXHIBITION.

The great Exposition now in progress at New Orleans bids fair to be a memorable event in horticulture, and to be of high value for the advancement of southern and southwestern pomology and gardening, which we believe are to be the chief industries of those sections in the near future. Appreciating this fact, we have arranged with that veteran horticulturist, Mr. E. Williams of Montclair, N. J., to represent THE AMERICAN GARDEN during the continuance of the Exposition, knowing that he possesses the respect and will receive the merited consideration and co-operation of all horticulturists he may chance to meet in the great Queen City of the Gulf.

PROPAGATING SHRUBS.

The natural method of propagating shrubs is by the seed, said Mr. W. C. Strong, at a meeting of the *Massachusetts Horticultural Society*. It is the cheapest, but also the slowest, and can only be used when we have seed-bearing plants, and can give the time.

If we are in haste with a new kind, grafting upon strong, congenial stocks gives a great gain in time. The rarest evergreens are multiplied with great speed and facility by this process. It is only necessary to start the stocks in pots, and when the sap is fairly moving, to side-graft the dormant scion, and then pack away in a shaded frame in the greenhouse, kept moist with sphagnum; and in a few weeks a skillful workman will show a large per cent. of well-established plants.

Deciduous shrubs are seldom grafted, but oftener propagated from cuttings of soft wood. The cuttings are taken in July or August, when the wood is in a half mature state, and put into boxes having two or three inches of soil at the bottom, and an inch or two of fine sand at the top. In close, shaded frames, with a slight bottom heat, the cuttings will root freely, and be strong enough to pack away during the winter. In spring they should be planted out, and will make stocky plants by autumn.

A cheaper mode, and effectual for many shrubs, is to cut the hard wood into proper lengths in autumn; then bury it in dry soil, in open ground, in bundles, bottom ends upward, sheltering with boards to keep from rain and severe freezing and thawing. In the early spring, plant firmly in carefully prepared garden soil. A large per cent. of most varieties will make a vigorous growth.

For those who cultivate plants in greenhouses the easiest method is to take cuttings of the soft wood in February, March, or April. These root readily in an ordinary propagating bed, and are ready to turn out into the open ground in May to make strong plants by fall. Those who raise Roses for winter-cut flowers find this method the most satisfactory. The essayist has been trying an experiment in feeding cuttings with a solution of cow manure just as the callus is forming, and is convinced that it induces the throwing out of strong, healthy roots, of more substance than we can get in pure sand.

TO HORTICULTURISTS.

Many will receive this number of THE AMERICAN GARDEN who are not subscribers.

We ask your attention for a moment, in the interest of your own work and of the grand cause of horticulture. As you will see below, this magazine has recently changed hands, and is now an independent journal of horticulture, in fact the only one of its class in America. And by this we do not reflect in the least upon any other publication, for the grand old *Gardener's Monthly* is without a peer in its field. *Vick's Magazine*, the *Ladies Floral Cabinet*, *Green's Fruit Grower*, and a few others are excellent journals, and have their own fields. A few of the weeklies give considerable space and much good work to horticulture. We wish them all God speed, and will do all in our power to promote their interests for the good of horticulture. But still, THE AMERICAN GARDEN is the *only* popular journal of general horticulture in America. Its special field is not only among skilled fruit growers, florists and gardeners, but it aims, also, to promote horticulture in all its phases, among amateurs, farmers, mechanics, professional men and all lovers of flowers and fruits, and of gardening.

Does not such a paper merit *your* support? We believe it does, and that you will say YES with emphasis, and will help such a work with your subscriptions and advertisements, and efforts among your neighbors in its and their behalf.

PLANTS AS PURIFIERS.

Dr. James Evans, in a paper read before the South Carolina Medical Association, says that the net-work of fine fibrous roots of trees and plants traversing the soil in every direction feed on the organic matter which would otherwise undergo decomposition and pollute the soil, air, and surface water. The vegetation also absorbs any excess of moisture and drains the soil. This is no doubt true, says A. S. Fuller; but it is often very difficult to so manage plant culture that there should neither be too many nor too few about our dwellings. The exhalations of trees and smaller plants may aid greatly in dispersing moisture, but it is also true that shade arrests evaporation and keeps the soil moist for a much longer time than when it is exposed to light and the direct rays of the sun. Plants and trees are no doubt great purifiers, but the jungles of India and the swamps of Africa are not healthy localities, although vegetation in great variety abounds, and in the utmost profusion.

OUR BOOK TABLE.

Outing, we are happy to note, meets with the full share of success it justly deserves. Each number is an improvement upon the last. Its holiday number is ready to greet the new year with a feast of jollity and good cheer, and the many artistic illustrations interspersed through its pages make it especially attractive. The "Amenities" department is bright and witty; the Letter-File contains contributions on various topics of interest to OUTING people; the Records are well kept up, and the Editor's "Open Window," though closed against the winter wind, is open to the sunshine that fills all departments of this indispensable and charming magazine. The Wheelman Co., Publishers, Boston, Mass.

German Simplified, by *A. Knoflach*, Tribune Building, New York, (The American News Company, Agents.) This new publication, issued in consecutive numbers, embodies the results of many years of earnest study and successful teaching of the author. His system, which is based almost entirely upon object lessons, is so simple and easy that to any one desiring to learn the German language with as little hard work and study as possible, this publication will be a welcome friend.

Schoolgardens of our Public Schools, by *Julius Jablanczy*, Klosternenburg, Austria, (German.) A small pamphlet in which the author who has devoted his life's work to this object points out the great advantages to be derived from the establishment of gardens in connection with public schools. The different chapters of the work treat of the general purpose and management of a schoolgarden; of what it should contain; how it should be arranged; plan and description of a successful schoolgarden; and a select list of fruits.

Transactions of the Mississippi Valley Horticultural Society, for the year 1884, being a report of the fifth annual meeting, held at Kansas City, Mo. Together with a full list of the papers read, with accompanying discussions; also, list of members, lists of officers of horticultural societies, business directory, and sketch of the horticultural department of the worlds' Industrial and Cotton Centennial Exposition at New Orleans. The limited space now at our disposal hardly permits as complete a review of this excellent volume as it deserves, but if there is any other report of three hundred pages that contains more solid, practical, horticultural information than this, we have not seen it. This is easily accounted for when it is considered that the subjects discussed at these meetings embraced almost every branch of horticulture, and that among those who took part in the discussions were many of the most experienced and renowned horticulturists in the country; and that in addition to this, the secretary's work is done in so able and exemplary a manner that any special subject may be referred to in a moment. The book is presented to all members of the society, and may be obtained from the Secretary *Prof. W. H. Ragan, Greencastle, Ind.*

Orchids. The Royal Family of Plants, with Illustrations from Nature, by *Harriet Stewart Miner*. Published by Lee & Shephard, Boston.

The publication of a work of this kind furnishes a stronger proof and clearer indication of increasing refinement and elevated taste among our wealthier classes than anything else could offer. The expense incurred by its publication must have been very great, and unless the publishers felt confident of corresponding sales, they would hardly have risked the investment. The book is a large octavo volume, gilt-edged, and finished in the highest style of art.

While the principal object of the work is not that of a scientific treatise, sufficient of the botanical classification and general characteristics of the family are given to make the reader familiar with the general features and most striking peculiarities of these marvellously beautiful plants. In opening the book it becomes at once apparent that the author's chief aim was not to frighten her readers with dry scientific introductions, but rather to entice them into a gorgeously blooming, fragrant orchid-house, where she felt ure to be able to interest them sufficiently to hold their attention without danger of wearying them. In a pleasing, fascinating style the author describes, from the amateur stand-point, all the most beautiful species generally found in cultivation; interweaving through her discourse the history, modes of cultivation, mythological legends relating to the respective species, together with some of the choicest poetical productions of the English language.

But the grand feature of this work are its magnificent life-like colored plates representing:

Dendrobium Devonianum, D. Ainsworthii, D. nobile, Masdevallia Veitchii, Cattleya Triane, C. Chocoensis, C. Mossiæ, C. Lodigesii, Lælia autumnalis, L. Dayeana, Phalænopsis Stuartiana, P. Schilleriana, Ancidium Barkerii, Calanthe Veitchii, Aerides quinquevulnerum, Odontoglossum Rœzlii album, O. triumphans O. Alexandræ, Lycaste aromatica, Vanda suavis, Cymbidium Hookerianum, Cypripedium niveum, C. Haynaldianum, and *C. Spicerianum*. Every one of these plates is a work of art from which the species and varieties represented may be identified at a glance.

With an increasing taste for Orchids for parlor and table decorations, and the prospect of their soon becoming the fashionable flowers, this work should meet with large sales among our wealthier classes. Certainly nothing could be more indicative of intelligent refinement and cultivated taste than the presence of such a volume upon the parlor or library table; and as a present it would, by many persons, be highly appreciated, and preferred to living flowers.

Back Numbers of the American Garden.—Correspondents will please take note that the price of back numbers of this magazine is 10 cents per copy, and we cannot afford to send them for less, for any purpose, on account of their cost and the time required in sending them.

ANSWERS TO CORRESPONDENTS.

Trailing Pyrus Japonica.—An old correspondent writes: "This last summer on a *Pyrus Japonica*, a shrub of very scrubby form and not at all given to meandering, about the middle of July several shoots commenced to grow from the top. They continued to grow vine fashion, three yards or more, and turned round and round until they resembled an English Ivy on a round trellis. I would like to know if such a growth is common, and if it is likely to stand the winter." On bushes that have been pruned back in the usual way, such a growth is not very common, but the plant is amenable to being trained over arbors and trellises as readily almost as a vine. Late and immature growth of any plant is not likely to survive very severe winter weather, unless a light covering with evergreen branches is given, which will probably preserve it.

Tree Pæonies.—*M. F. C., Tusket, N. S.*—This class of Pæonies may be propagated by division of the roots. cuttings of the young shoots in spring, by layers and suckers, but they are rather difficult and slow of propagation. The principal method of propagating them followed by nurserymen is by grafting on the roots of the herbaceous kinds. There are a great many varieties, some of them of exceeding beauty in cultivation. For a small collection we should name as the most desirable varieties: *albæ plena* double white shaded with purple at the center; *Arethusa*, light rose, shaded with purple, large and fragrant; *extensa*, very large; rose, clouded with purple; *Reine Elizabeth*, rosy crimson in center, shaded off to a light rose towards the margin, full and of very large size; *Kochlerii*, dark rose turning to purple; *Banksii*, very large, fragrant, rosy blush with purple center.

THE AMERICAN GARDEN,

Lately published by Messrs. B. K. Bliss & Sons, was made a monthly magazine and built to a high point of excellence by them and by Dr. Hexamer. Under the new management it becomes an independent force for the promotion of horticulture in all its branches, and seeks support from horticulturists everywhere. It now has no mercantile affiliations, and has nothing to sell. This volume will be greatly improved in many ways.

It will have the best contributors among practical horticulturists.

It will give more attention to new fruits, flowers and vegetables.

It will pay considerable attention to seeds and seed growing.

It will promote the work of women in horticulture.

It will be a special help to boy and girl gardeners.

It will aim to be the leading horticultural publication in America.

It will continue to be accurate, thorough and helpful in teaching the best methods of culture and the best varieties to plant.

TO ALL HORTICULTURISTS, GREETING:

The American Garden is recognized as the foremost popular periodical for general gardening and allied branches published on this continent; and now that the only objection that has ever been made to it—that of its having been published by a firm engaged in the sale of horticultural wares—has been removed, there is nothing to prevent its becoming *the* independent and impartial organ of progressive *American Horticulture*. To accomplish this end is my most ardent desire, and to aid me in this endeavor I appeal to every intelligent horticulturist who appreciates the importance and value of such an organ. Let every one co-operate in the way he considers most effective, and for my part I promise that all the strength, all the work that is in me shall be devoted to the common cause. Yours fraternally,

F. M. HEXAMER, Editor.

THE NIAGARA WHITE GRAPE.

This noted grape, now first put upon the market by the Niagara White Grape Co., and by the general agent, T. S. Hubbard of Fredonia, and their authorized agents, is also offered to THE AMERICAN GARDEN family in return for good words in behalf of this magazine. See page 15.

SOME VALUABLE NEW VARIETIES.

Everybody has heard of the enterprise of the *Rural New Yorker* in disseminating seeds of valuable varieties of field and garden plants. This year its publishers send out seeds of selections from a crop of 50 varieties of Indian Corn grown in the same field; the Stratagem Pea, which we have tried and know to be good; the now famous Johnson's Grass of the South, for northern cultivation as it has proven hardy; the Bicolor Tomato; King Humbert Tomato, recently described in these columns; the Prince of Wales Pea; a Green Flageolet Bean, we have grown it several years and know it to be a superior sort; and a large collection of flower seeds. All of the above are sent free to every subscriber. And we will send THE AMERICAN GARDEN with its presents as on page 15, the *Rural New Yorker* and the above valuable seeds, *all for* $2.60.

ARE YOU READING ANYTHING?

"THE AMERICAN GARDEN" IN CLUB WITH OTHER PUBLICATIONS.

If you want any of the following leading publications for 1885, we will send them in club with AMERICAN GARDEN for the prices named in the last column. This offer is good for both new and old subscribers. *And all club subscribers are also entitled to the seed and plant premiums offered on page* 15 to each subscriber.

A. *Publisher's price for both.*

B. *Our price for both, including seed premiums of The American Garden.*

	A.	B.
American Agriculturist	$2.50	$2.00
Arthur's Home Magazine	3.00	2.40
Atlantic Monthly	5.00	4.25
Babyland, for youngest readers	1.50	1.25
Builder (for home builders)	3.00	2.00
Century Magazine	5.00	4.50
Christian Union (best of the great weeklies)	4.00	3.00
Country Gentleman	3.50	3.00
Demorest's Magazine	3.00	2.60
Farm and Garden	1.50	1.25
Farm Journal	1.50	1.25
Farmer's Review	2.50	2.00
Floral Cabinet	2.25	2.00
Gardener's Monthly	3.10	2.50
Godey's Lady's Book	3.00	2.60
Green's Fruit Grower, and new book on "How to propagate and Grow Fruit."	2.00	1.20
Harper's Weekly	5.00	4.25
" Bazar	5.00	4.25
" Monthly	5.00	4.00
" Young People	3.00	2.60
Inter-Ocean (weekly)	2.00	1.75
New England Farmer	3.50	3.00
Our Little Ones and Nursery	2.50	2.25
Outing	3.00	2.65
Peterson's Magazine	3.00	2.65
Poultry World	2.25	1.75
Rural New-Yorker, with its great free distribution	3.00	2.60
St. Nicholas	4.00	3.50
Texas Siftings	3.50	2.90
Sun, New-York, weekly	2.00	1.90
Tribune, New-York, weekly	2.00	1.90
Vick's Magazine	2.25	1.75
Youth's Companion (renewals)	2.85	2.75
Youth's Companion, new subscription	2.75	2.25
Wallace's Monthly	4.00	3.65
Western Rural	2.65	2.50
Western World, and sectional map of any state	2.25	1.85
Wide Awake	4.00	3.00
FOREIGN PUBLICATIONS. All postage paid.		
Agricultural Gazette	6.50	6.00
Gardener's Chronicle	7.50	7.00
Gardening Illustrated	3.15	2.80
The Garden	7.00	6.25
Journal d'Agriculture Pratique	7.00	6.50

If you want more than one of the above or any other publications in club with THE AMERICAN GARDEN, we will give prices on application. Address,

E. H. LIBBY,
NEW YORK. Greenfield, Mass.

TO OUR FOREIGN SUBSCRIBERS.

On account of the long time required for notices to reach our foreign subscribers, and remittances to be made for renewals, we shall continue to send THE AMERICAN GARDEN to them until a sufficient time will have elapsed for them to have replied to our circulars notifying those whose subscriptions have expired of the fact. Some may get the renewal notices who will have already sent their subscriptions for 1885. All such will understand that the mails probably crossed en route, and that they will get due credit for their remittances

If any desire to remit for several years at a time, and thus save the trouble and delay of these annual renewals, we will make a discount of 5 per cent. per annum on all remittances for more than one year's subscription, to be deducted before remitting.

THANK YOU! THANK YOU!

We extend our hearty thanks for the many kind words that THE AMERICAN GARDEN has received from the friends of horticulture, consequent upon its change of publishers. It is our aim to make a journal that will command the support and co-operation of all horticulturists in our efforts for the promotion of horticulture. With your encouragement in words and subscriptions and efforts among your friends, we shall add to the success already attained. And the proceeds of our success shall go toward the promotion of horticulture in all good ways.

GOOD READING AT LOW COST.

Green's Fruit Grower is an excellent pomological quarterly, as almost everybody knows. Mr. Green has recently written a bright and valuable book on "How to Propagate and Grow Fruit;" Price, 50 cents; cloth, $1. We will send the *Fruit Grower*, the book, and *The American Garden* to any address for $1.20.

"HOW THE FARM PAYS."

Those who read with interest the review in our December issue of the new book by Peter Henderson and William Crozier, will be pleased to learn that we have arranged to send this book prepaid to any person who will send us four subscriptions to THE AMERICAN GARDEN at $1 each. (Value, $2.50.)

YOUR

SUBSCRIPTION HAS EXPIRED.

Why not ask your neighbor to let you send his subscription along with yours? Please see page 15 for seed and plant premiums and list on page 14 for club rates with other publications. THE AMERICAN GARDEN for 1885 will be better worth your $1 than ever before.

This number of THE AMERICAN GARDEN is sent to several thousand persons whose subscriptions expired with the December number, as reminder of their neglect to forward their subscriptions for 1885. PLEASE RENEW PROMPTLY, and thus save us much work and expense. Why not to-day?

THE AMERICAN GARDEN.

IS NOT

Connected with any mercantile house.
An organ of any merchant.
An advertising sheet.

IS

An independent Journal.
Devoted wholly to horticulture.
The organ of fruit, flower and vegetable growers.
Edited and written by practical horticulturists.
The only journal in America devoted to general horticulture for popular reading.

ASKS

The cordial co-operation of horticulturists in subscriptions and advertisements.
A good word for it to your friends.
Prompt renewals of subscriptions.

HAS

No axes to grind.
Nothing to sell.
Nothing to puff.

WILL NOT

Puff unworthy varieties.
Admit fraudulent advertisements.

WILL

Give every new variety and method a fair hearing.
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(Continued from previous page.)

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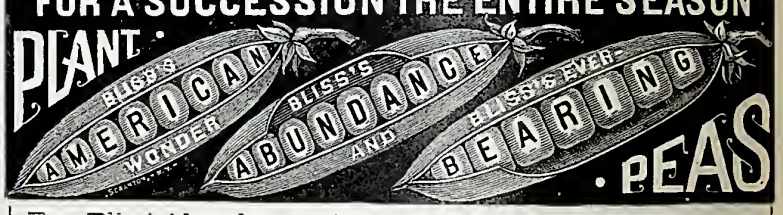

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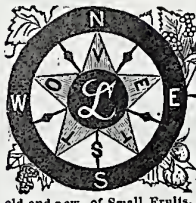

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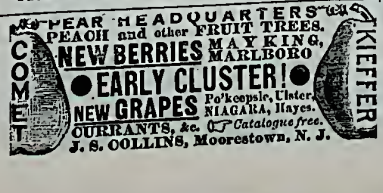

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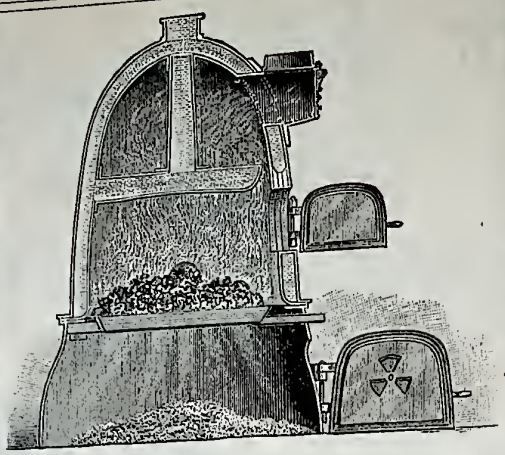

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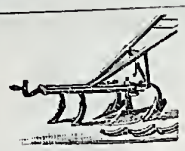

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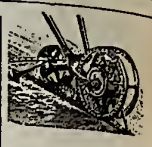

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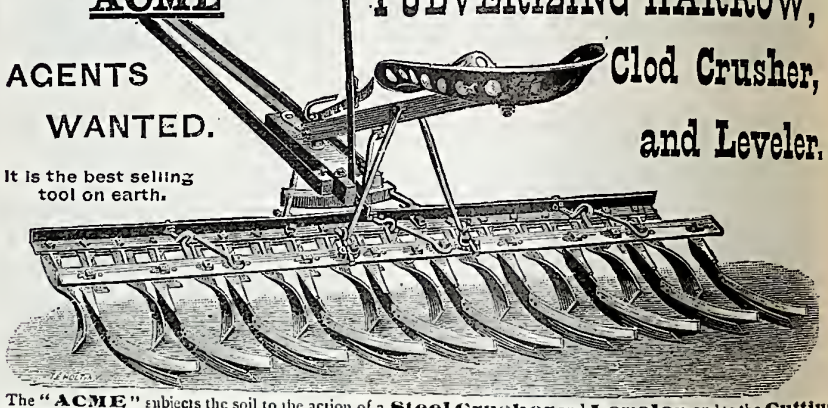

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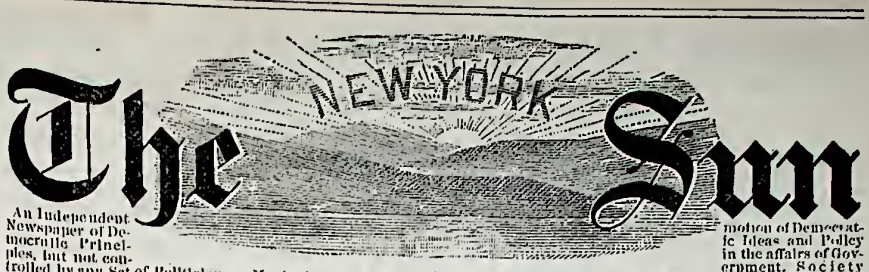

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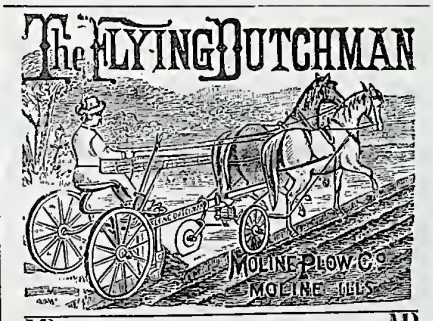

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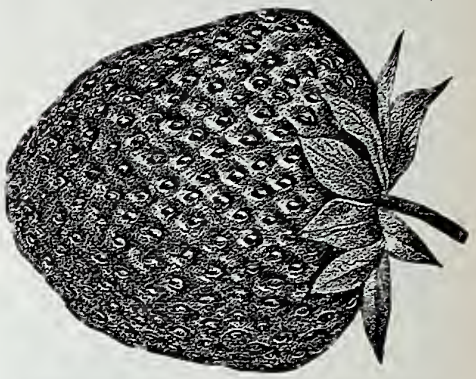

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FOURTEEN ACRES OF POTATOES YIELD 4,480 BUSHELS, ONE ACRE 528 BUSHELS, ONE-HALF ACRE YIELDS 280 BUSHELS.

Report on nineteen acres in Potatoes.—"Mammoth Pearl," 14 acres yielded 4,480 bushels (280 bushels per acre.) History of the field for ten years, no manure applied since 1875. Only the Mapes Potato Manure applied since.

SOIL—Clay. moderately heavy.

PREVIOUS TREATMENT—Had received no barn-yard manure for ten years, since fall of 1874. In Spring 1875 planted with Potatoes, yield fair. We never could get over some 4n barrels, 50 barrels at the outside, per acre, of potatoes, on the farm till we used the Mapes Potato Manure. 1875 in the fall, sowed Wheat and Timothy, applying 600 lbs. of ground bone, yield good. 1877, 1878, 1879 cut grass. 1880 planted potatoes on sod, using 800 lbs per acre of the Mapes Potato Manure. All but five acres had to be replanted on account of poor seed, yield, much reduced by this set back, about 4n barrels (2¾ bushels) per acre. 1880, sowed Wheat with Timothy in the fall, without any additional Manure, relying upon the Mapes Manure applied in the Spring to the Potato crop, yield on the 14 acres over 30 bushels per acre. 1882, 1883, mowed for two years, plowed it in the fall for Potatoes. 1884, Spring, planted Potatoes on 19 acres including the 14 acres above described, applying 1500 lbs. per acre of the Mapes Potato Manure, 500 lbs. broadcast before harrowing, 500 lbs. scattered in the rows before planting, and 500 lbs. at the second hoeing, along the sides of the rows, when the vines were 4 or 5 inches high; Planted "Mammnth Pearl," home grown seed. Planted in rows, 3 feet apart (perhaps a little scant) and 15 to 18 inches apart in the rows. Cultivation—weeds were kept down clean until late in the season, when during the hot weather, they grew prodigiously, so that by the weeds together with the crab grass, every spot not taken up by the potato vines themselves, was fully covered by a thick mat. Some of the weeds were thicker than the heavy rounds of a chair, and hard to pull up. Yield: Three acres of this 19 acre piece were almost a failure, owing to poor, seed or some other cause they didn't come up, these were replanted, yield 470 bushels, nr 157 bushels per acre. The balance of the piece, 16 acres yielded on measurement 4,480 bushels, being 28n bushels per acre. The quality of the entire piece was variable and not equal to the half acre in the experiment field with northern seed. This season in our section was one of the worst ever known for poor quality and liability to rot. We have now (Dec. 4th) some 800 to 900 barrels remaining from this lot, in cellar and they show no signs of rotting. An interesting experience in our neighborhood points to the trouble in quality and bad appearance of the potato being in some instances developed *after the growth* at the end of the season. A neighbor being apprehensive of rot dug several rows and sold the potatoes to the extent of some 40 barrels, at full market price, these potatoes were smooth, clean and handsome with no signs of rot. Only three weeks afterwards in digging the balance of the field the potatoes were found to be scabby, rough and anything but handsome. In comparing the yield from the 16 acres (28n bushels per acre) with the product of the *one half* acre (northern seed) 28n bushels equal to 56n bushels per acre, it will be seen that the yield on the half acre is just at *double the rate* of the large field. The reasons for the same must be found in there *being twice as many rows* (18 inches instead nf 36 inches apart) per acre in the small piece as in the large field, as well as in the difference in the seed (northern, instead of home-grown) and the larger quantity of plant food supplied. Wheat is now sown over the entire piece including the one acre potato experiment (half an acre mulched and half an acre not mulched.) This is an entirely different field from the 2n acre field of potatoes reported on last year. (Signed) W. S. COMBS M. D. FREEHOLD, NEW JERSEY.

REPORT ON ONE ACRE OF POTATOES YIELD 528 BUSHELS.

A. One half acre—"Mammoth Pearl," northern seed, yield 16,829 lbs. equal to 280 bushels.

B. One half acre—"Mammoth Pearl," Home raised, seed yield 248 bushels.

Piece "A" Ground accurately measured, one half acre (less 180 square feet.) Soil clay moderately heavy, but better adapted for potatoes than some clay soils containing iron and inclined to bake. The preparation of this acre was thorough and the land at planting very friable and nice. It had received no manure but the Mapes prior to 1881 and had been for many years in grass, neglected until there was only a thin soil full of weeds when it was plowed up in 1881 for corn. It was just such land as I term ordinary common farming upland. Potatoes planted in rows 18 inches apart, 12 to 15 inches apart in the row, covered and levelled flat. Smoothing harrow used until the vines were 2 or 3 inches high, kept clean from weeds up to that time, then a single tooth cultivator was run between the rows full depth, (say 5 inches) and the Mapes Potato Manure, 500 lbs. per acre, distributed in the cut or furrow for the purpose of inducing root growth from rows, then a mulch of wheat chaff was spread evenly two inches in depth over the entire surface of the half acre, excepting on one half the length of four rows, this strip was left without any mulch to test the effects of the mulching; no cultivation was given after the mulch was spread.

Fertilizer used. 8nn to 9nn lbs. of the Mapes Potato Manure spread evenly over the entire surface, after a broadcast dressing of 2n loads of stable manure: The yield was 16,829 lbs. equal to 28n bushels (60 lbs. each) on this piece, one half acre. These measurements were accurately made by disinterested parties. This very large yield is explained by the fact that the rows were twice as numerous as usual (18 inches apart instead of 3 feet) and the potatoes (contrary to expectations of some neighbors) instead of being small were very large, unusually so and very superior in quality, rarely excelled. The test made on the half of the 4 rows (4n feet long) by omission of the mulching showed no difference in *either quality* or *quantity* of yield. There was no perceptible difference at harvest. If the season had been a dry one the mulching might have proved beneficial.

Piece "B." The conditions of this piece of one half acre, were apparently just the same as with the half "A," including character of soil, fertilizers used, method of planting, excepting that *home raised* seed was planted and no mulch used. Yield was much inferior in quality and size of the potatoes as compared with plot "A". The product was not accurately weighed, but it fell short of the yield of plot A, by twelve to fifteen per cent. but was certainly not less than 248 bushels on the half acre. The potato bugs did considerable damage to this piece and reduced the yield, possibly enough to make up the difference. All of this potato ground had been fertilized for three years before, exclusively with the Mapes Manures. In 1881 1,000 lbs. for corn. 1882, 800 lbs. of the Mapes Potato Manure for potatoes, in 1883 with 500 lbs. of the Mapes Complete Manures for "Light" and "Heavy" soils, ½ each, for Wheat.

(Signed) W. S. COMBS, FREEHOLD, NEW JERSEY.

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The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

Vol. VI. Old Series, Vol. XIII. FEBRUARY, 1885. No. 2.

A BUNCH OF ROSES.

A bunch of beautiful Perles des Jardins, Niphetos, Catherine Mermets and Bon Silènes which a generous friend has placed upon our table, spreads its delicious fragrance through the room and transports the mind to the balmy days of June. Indeed it is but a few years that Roses and June seemed as inseparable as snow and winter; and when now we find, in our large cities, Roses in greater demand, and more plentiful than in the "Month of Roses" itself we cannot but wonder in amazement how great and rapid has been the progress and improvement in this branch of floriculture.

The amount of money invested in growing Roses under glass in the vicinity of New York would seem incredible to the uninitiated. Not only are there many hundreds of forcing houses owned by professional growers, but many private establishments have separate Rose houses the surplus product of which finds its way to the markets. As a rule—not an infallible one though—the prices are naturally proportionate to the cost of production, and it will therefore readily be perceived how a few hundred, or thousand dollars even, may easily be spent in transforming a suite of parlors into a Rose garden.

This lavish expenditure for flowers is frequently condemned by contemporaries, arguing that this money might be devoted to worthier purposes. While this may, in some measure, be true, it is also true that it is not always an easy matter to correctly decide where and in what manner money may be used to the best advantage. "Give it to the poor," some will say. Now, the fact is that the rich as a class give a great deal more in charities than is generally supposed. On the other hand it is evident that the indiscriminate bestowing of charities does more harm than good, as instead of benefiting the recipients, they more frequently encourage them in idleness. That there are thousands of deserving poor in our cities cannot be denied, but it is not a very easy matter to reach them, as this class of poor shrinks from asking charities, and is not found lounging around soup houses and the offices of charitable institutions.

To devote a part of one's possessions to what gives enjoyment to oneself and friends is certainly an indisputed individual right. But to draw a comparison, the laboring man who spends five and ten cents every day for tobacco and drinks is proportionately far more extravagant than the millionaire who pays a thousand dollars a year for flowers. Nearly all this money paid for flowers goes directly to laboring people, and remains in the country, while that which is sent to Europe for paintings, statuary and luxuries of various kinds is of no benefit whatever to our own working classes.

It is far from our intention to undervalue art and its refining influences, but we do claim for horticulture a due share in its realms. To transform the wild Rose into the perfect type of to-day and make it expand its glorious blooms in mid-winter; to metamorphose the small meadow Strawberry into the luscious "Jersey Queen;" to bring together the varying species of a genus from different parts of the world, and so hybridize and cross them as to produce new forms of flowers and fruits which combine the desirable qualities of all, requires as much, if not more, skill, science and perseverance than to portray the model on canvass or chisel in marble. The one produces the original, the other the copy.

As we take another look at our living bunch of Roses, while a fierce snow storm rages without, pelting wildly against our windows, the contrast between art and nature presents itself in vivid colors which no painting ever so artistic could equal; and the thought arises whether the skill and labor that have thus annihilated seasons and storms, beautified and perfected nature herself, are not entitled to as much recognition as fine arts, and whether those who have devoted years of study and patient intelligent labor to this purpose are not as deserving of encouragement and reward as the painter and sculptor.

A BUNCH OF ROSES.

PRESERVE THE FALLS OF NIAGARA.

One of the most disgraceful spectacles in our land is the wanton destruction of the vicinity of Niagara Falls by men utterly devoid of all aim higher than that of fleecing the largest amount of money possible from helpless visitors. We are therefore glad to note that the Niagara Falls Association has begun active work again to preserve what is left of the natural scenery, even if all its former beauty cannot be restored.

At the large and influential meeting held in New York on January 9th, it was urged that influence be brought to bear upon the State Legislature, by forming branch societies in various parts of the state, and thus public opinion be aroused for the good cause. It must be made evident that the outlay demanded for the proposed park will be a profitable investment, and that an adequate return will be realized upon all moneys expended. So laudable a scheme as the preservation of this great Natural Wonder, free and intact, forever to the people of this state and of the world at large, should commend itself heartily to the judgment of all right thinking persons; and no rightful means should be spared to provide what is needed in the future to secure the scenery of Niagara Falls from further destruction.

TWENTY-FOUR PAGES.

The pleasant pressure of appreciative patrons of our advertising department compells us to increase the capacity of The American Garden to 24 pages, or including the cover 28 pages. Present appearances prophecy a permanent increase to this or a larger size.

The Vegetable Garden.

SEASONABLE HINTS.

If not already done, no time should be lost now to secure a sufficient supply of all seeds that may be needed in the garden.

Old Seeds left over from last year are often as good as fresh ones. It would therefore be unnecessary waste to throw them away. Of some classes of plants, those of the Cucurbitæ, especially, two and three years old seeds are even preferred by market gardeners, to seeds of the previous season's growth. Other kinds, however, can not be relied on for more than one or two years. All old seeds should therefore be tested for their vitality, so that if they are found wanting, others may be procured before sowing time.

Testing Seeds of the ordinary garden vegetables is a very easy matter. All that is necessary is to place the seeds under the conditions necessary to growth, that is to give them moisture and warmth. With the hardier varieties, such as Radishes, Beets, Cabbages, etc., this may be accomplished by sowing the seeds in flower pots, by themselves or around window plants, and keep account of the percentage that sprouts. Tomatoes, Peppers and Egg-plants require more heat; these may be scattered between pieces of cloth, or blotting paper, placed near a stove and kept constantly damp.

But in testing seeds it should be borne in mind that the germination of seeds under such favorable conditions does not warrant the conclusion that they will grow out-doors equally well. Seeds may sprout under the genial influences of a greenhouse test, and yet be of so low a vitality as to fail when sown out-doors under less favorable conditions. The vigor of the sprouts and the time in which they appear have to be carefully considered in drawing conclusions from seed tests. If, for instance, out of one hundred Cabbage seeds, fifty should germinate within three or four days, and thirty within five and ten days making it eighty per cent. in all, this would indicate a low vitality of thirty per cent., and it would not be safe to count on more than fifty per cent. of strong healthy plants at the best.

In *Keeping Seeds* much depends on the manner and place in which they are stored. Under favorable conditions seeds retain their vitality much longer than otherwise. Seeds are not injured by the severest cold, provided they are kept dry.

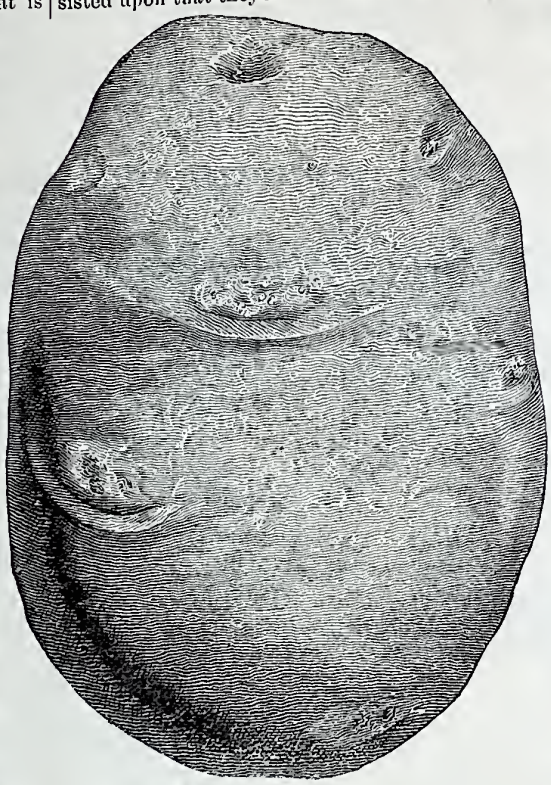
Preserving Vegetables.—All kinds of culinary roots are enjoyed at this season more than at any other, and nothing is more disheartening than after having raised a fine crop of Beets, Parsnips, Salsify and Turnips, and having stored them snugly in the cellar, to find them in mid-winter either frozen, or so shriveled up as to be unfit for use.

An ordinary cold-frame may serve excellently for the purpose, by digging out the soil, spreading the roots on the ground, covering with dry earth, several inches of dry leaves, and then replacing the sashes.

TWO CROPS OF POTATOES A YEAR.

In the South two crops of Potatoes may be grown in a season. This is occasionally done and it is strange that it is not a general practice, for it would yield more than double profit to the planter.

The first crop is planted early in the spring that it may mature early. The first planting can be done in February and the crop harvested in May. These are shipped North, where they bring "the top of the market." While digging the first crop the small Potatoes are sorted out and spread in some well lighted place, but where they will be protected, from the direct rays of the sun. In about two weeks they become of the greenish color indicative of maturity and are then fit to plant. They must be of this green color before being planted, or they will remain in the ground without sprouting until the following spring. The tubers are not cut for the second planting; it is always insisted upon that they must be left whole.



THE GREAT EASTERN POTATO.

The second planting is made from the middle to the end of June. The best plan is to drop the sets from eight to ten inches apart in rows and cover them lightly with a hoe; and the furrows (better the whole field) should be mulched with leaves, short straw, or some light stuff. If one or two good rains fall on them their success is assured; there is no chance of failure. The second crop matures in October and can be dug leisurely during the fall, as it is rarely the case that the ground is frozen much before Christmas. The second crop yields well, keeps better during the winter, and makes excellent seed for the next spring's planting.

As thousands of barrels of Potatoes are shipped from the North every year, it would certainly be to the interest of southern planters to double their home production by raising two crops a season. The early crop can be sold at a handsome figure because it can be put first of all upon the northern markets; and by raising a second crop for home consumption the hazard of keeping Potatoes, always great in the South, is considerably lessened.

Only the small tubers are selected for seed for the second planting; this is characteristic of southern agriculture where ease is too often the first consideration. The small tubers mature (grow green) more rapidly than large ones, do not require cutting, and are not marketable. I do not propose to discuss the problem of large or small tubers for seed. I wish only to say that the tuber is not a seed, but a cutting, and a nurseryman who selected a weak stem for a cutting, and who would allow a large number of buds to grow upon each cutting, would be criticised by his brother nurserymen. Yet this is just what is done by the Potato grower who uses small seeds or who does not cut the tubers. JOHN M. STAHL.

NEW POTATOES.

Prominent among the new Potatoes that have come to our notice are the Great Eastern and Dictator, now being introduced by Jas. M. Thorburn & Co., 15 John street, New York. Both varieties have been originated by Mr. E. S. Brownell of Vermont, by crossing the Excelsior with Peachblow.

The Great Eastern, represented in our illustration, is an exceedingly handsome Potato of large size and flattened oval in shape. Skin white and smooth, eyes very few and almost even with the surface. The bulk of the crop is very uniform in size, and tubers weighing two pounds are not rare; its cooking quality leaves nothing to be desired. The vines are of medium hight, stocky and healthy, foliage dark green. It matures medium early, grows compact in the hill and is, according to Mr. Brownell, one of the most, if not the most, productive variety in cultivation.

Dictator resembles the above variety very closely in general appearance; in shape it is more cylindrical, and its eyes are slightly indented; its season of ripening is about two weeks later than that of the former, and its keeping quality is unsurpassed.

A NEW USE FOR SAFE DEPOSIT VAULTS.

One of our well known New York seed firms has now on deposit in the Mercantile Safe Deposit Company's vaults four hundred pounds of Henderson's Snowball Cauliflower Seed, which at the selling price of one hundred dollars per pound shows the value of this seed to be forty thousand dollars. Not only is this plan of depositing in vaults found to be cheaper than insurance, but what is of more importance is that if the seed should be destroyed by fire this quantity necessary for their trade could not be replaced at any price in time for the spring sales. When it is considered that four hundred pounds of Cauliflower seed will under favorable conditions produce nearly thirteen million plants, which when headed for market and sold at even eight cents per head will produce the sum of three quarters of a million dollars, the value this vegetable has attained in this country, where twenty-five years ago it was almost unknown, becomes readily apparent.

HENDERSON'S NEW ROSE CELERY.

The ornamental appearance of Celery on the table is almost as important a factor in its value as its eating quality; the introduction of a rose-colored variety will therefore be welcomed by all who have an eye for beauty as well as a palate for taste. In Henderson's New Rose Celery, one of the novelties introduced this season by Peter Henderson & Co., 35 and 37 Cortlandt street, New York, we have not only a variety of superior flavor and crispiness, but also one of remarkable beauty, its stems and heart being delicately shaded with rose.

"All who have had experience in the growing of celery," says Mr. Henderson, "know that varieties that are tinged with red are hardier and more solid, and hence better keepers in winter, and also that under the same conditions they are always more crisp and superior in flavor to the varieties that blanch yellow or white."

A combination of this new variety with White Plume and Golden Heart seems to admit of as much display of taste, almost, as the arrangement of flowers.

A NEW PEPPER.

With the introduction of some of the milder yellow varieties of Peppers has developed a taste for less pungency in this fiery vegetable. The Golden Dawn seems to fill this requirement pretty well, but it cannot be denied that the correct color in a pepper seems to be red.

Burpee's Ruby King, now introduced by W. Atlee Burpee, Philadelphia, is claimed, to possess as little pungency as is compatible with a respectable Pepper. It averages from four to six inches in length, by three to four in thickness, but many specimens grow considerably larger, and when ripe it is of a beautiful, ruby-red color. It is said to be always remarkably mild and pleasant to taste—unequaled, in this respect, by any other variety—so that it may be sliced and eaten with vinegar and salt like Tomatoes or Cucumbers. The plant is of sturdy, bushy habit, and remarkably productive.

THE CABBAGE AND ITS HISTORY.

Sometimes the least attractive objects are full of interest through their associations. To the casual observer, the Cabbage is a homely thing. The student of natural history, however, discovers facts connected with it which are most fertile in their suggestions, and which send a gleam of light backward into the mystery of the origin of species.

As seen in the markets, the Cabbage, Kale, Cauliflower, Kohl Rabi, and Brussels Sprouts are five very distinct vegetables. They have, however, one point in common. They all have a certain "Cabbage" flavor. The seedsman knows that the seeds of these five vegetables are strikingly alike, and the gardener is aware that the most careful scrutiny is necessary to distinguish the young plants. Despite their difference in form as we see them in the market, botanists are well agreed that these five vegetables have all descended from the same remote ancestor,—the wild Cabbage; and that the changes are the result of man's interference with the plant.

We should expect that the rag-a-muffin-boy from the streets of New York, adopted into a refined Christian family, would develop gifts and graces that would never have appeared amid the squalor of his first surroundings. Just so the wild Cabbage, transplanted from the starved, and crowded state of its native home, into the fertile soil of the garden, where it was sheltered from the struggle for existence, became exuberant with vital force, and developed many, and marked variations from the original.

HENDERSON'S NEW ROSE CELERY.

The wild Cabbage now grows on the sea-coasts of Western Europe. It is described as a rather coarse, homely perennial plant, that resembles the vegetables mentioned above in few respects except in its flowers and seeds. It forms neither the head of the Cabbage, Cauliflower, nor Brussels Sprouts, the thickened stem of the Kohl Rabi, nor the laciniated leaves of the finer Kales. The

BURPEE'S RUBY KING PEPPER.

precise order in which these widely different plants have evolved from their common parent is, and probably must remain a matter of conjecture. Certain indications, however, aid us in forming opinions upon the subject. It seems most probable that these forms have not developed successively from one another, but that they are rather the outgrowth of nearly simultaneous variations in different directions. The Cabbage evidently possesses great assimilative power, and when the wild plant was relieved from the crowding of other plants, and given abundance of food, it became fat, by storing up nutriment in great abundance. Sometimes this fatness was evenly distributed through the plant, as in the larger Kales. In other cases it became localized, giving to one, or another part of the plant an undue enlargement. As the value of the plant to man was in proportion to its accumulated nourishment, such variations were carefully preserved. Thus in certain plants, the stem became abnormally thickened, as in the Marrow Kale, by the continued selection of plants having the thickest stems through an indefinite number of years, a variety resulted having a roundish expansion upon the stem: our Kohl Rabi.

In other plants, the fatness became localized in the flower heads, by which the normal flowers were substituted by a tender, fleshy enlargement. This, being very delicate in flavor, was especially sought after, and the plants that produced the greatest number of these fleshy heads at the same time, were most prized. Thus, through centuries of selection, a plant was produced in which all the flower heads are fleshy, and are produced simultaneously: I refer to the Cauliflower.

Then in others, the superabundant nourishment was deposited in the leaves, in such a manner as to cause them to fold about one another: the Cabbage. Just how this folding is brought about, we do not know. Perhaps it is due to an excessive development, of the mid-rib, which being more prominent on the lower side of the leaves, causes the latter to curve inward.

In other plants the buds, which do not usually develop until the second year, became much enlarged, by a dense covering on tender leaves, forming the Brussels Sprouts; while in still others, the veins of the leaves became developed far beyond the parenchyma, forming the beautifully cut, and frizzled Kales.

Thus, through centuries, perhaps thousands of years of selection, a single wild plant has developed into five distinct vegetables. These marvelous changes are not the result of a preconceived plan, but rather of the slow, unconscious growth caused by the natural tendency to preserve the most desirable variations. "ELM."

MARVELOUS POTATO YIELD.

When a few years ago the former publishers of THE AMERICAN GARDEN offered premiums for the largest amounts of Potatoes grown from one pound of seed, the greatest yield reported was 1,694 pounds. This seemed so incredible that, at the time but few persons would believe it, considered the statement a pretty big Potato story? But when now, the committee appointed to award the premiums offered by the Bradley Fertilizer company of Boston, for the largest yields grown from one pound of Dakota Red Potatoes, with the use of their fertilizers, report a yield of 2,558 pounds, that former big Potato story sinks into insignificance. Yet any one who knows that Potato slips may be propagated in geometrical progression, will not doubt for a moment, that these quantities can actually be produced.

The Fruit Garden.

SEASONABLE HINTS.

Whatever preferences and theories fruit-growers may have as to the best season for pruning, there is no month in the year during which it can be performed more conveniently than February. The ground is still hard so that it is easy to move about and cart away the brush; the absence of foliage exposes every limb and branch to plain view; the days are rapidly becoming longer and warmer; and above all there is more leisure now than at any other season.

Pruning Trees.—In well managed orchards it becomes seldom necessary to cut away very large limbs, the trees having been so trained when young that there will not be any superfluous main branches. But as not all orchards are in this enviable condition, large branches will sometimes have to be removed. In this case the wounds thus produced should be covered with some substance that protects them against the influence of water and air, else rot soon sets in, and will ultimately destroy or seriously injure the entire tree. Grafting wax, shellac dissolved in alcohol, mastic, cow dung and clay, and other substances are used for this purpose, but for convenience of application and, at the same time, answering all purposes nothing is better adapted than the ready mixed common paints, applied undiluted.

Pruning Grape Vines.—There is no more vexatious question confronting the amateur fruit-grower than what to do with an old, neglected, entangled grape-vine; and the advice he generally gets—to cut it down and plant a new one—is about as satisfactory to him as that of exterminating bugs by setting the house on fire. Both remedies are radical but they do not always answer all purposes.

In pruning grape-vines, old or young, the main point to keep in view is that the fruit is borne only on young wood, therefore all the old, naked branches, farther than serving as a support to the fruit bearing canes, are only so much dead weight which has to be nourished with food that should be devoted to the production of fruit.

If there are any young canes starting from near the roots of old vines, these should be taken good care of and made to form the frame of the rejuvenated vine, while a few of the largest, bare old branches may be cut away entirely. The remaining ones should be tied up so as to allow as much room and sunlight to the young canes as possible. The following year another part, or all of the old wood may be cut off according to the growth and vigor of the young canes. If there should be no young shoots at all it is generally best to layer one of the most vigorous and flexible branches to a convenient spot and treat like a young vine. In a year or two it may be detached from the parent vine whose place it may now take.

Pruning Raspberries and Blackberries at this season consists simply in removing all old dead canes and shortening in last year's growth. If they have been summer pruned, as advised in previous numbers, only the side branches have to be clipped to about eight or ten inches, but when this has been neglected the main canes have to be cut back and tied to stakes or trellises.

MANAGEMENT OF ORCHARDS.

Whether the land occupied by orchards of fruit trees should be plowed and cultivated, or sown in clover and grass and remain undisturbed is still a frequent subject of inquiry in the correspondence of the Agricultural Department, says Superintendent Wm. Saunders. The object in planting fruit trees, it is hardly necessary to state, is to produce fruit, and that course of general treatment which best maintains the trees in a healthy state of growth, and at the same time keeps them in a condition of productiveness, may be considered as being good, whether the treatment involves the plowing and cultivation of the soil, or whether these good results are attained by sowing the orchard in grass, and keeping the surface covered with sod.

It is well known that eminently productive and profitable orchards can be shown under both of the above systems of management, for the time being. Cultivation or non-cultivation are simply expedients to be adopted in gaining certain wished-for results; the primary mistake is to attempt to turn either expedient into a fixed and unchangeable system.

The processes generally included in the term cultivation, such as plowing, harrowing, &c., are all favorable to the encouragement of growth in plants, and when applied to fruit trees, the usual result of increased vigor will be produced. But it is also well understood that the greatest vigor of growth is not always combined with the greatest productiveness of fruit; on the contrary, it is a recognized fact that a tree cannot display unusually great vigor of growth and at the same time be correspondingly fruitful.

On the other hand, it is common knowledge that trees growing in poor soil, and without receiving cultivation of any kind, will not long continue to maintain sufficient vitality to enable them to produce perfect fruit, nor, indeed, fruit of any quality. These extremes of poverty and luxuriance are similar, inasmuch as neither condition is the best for the production of fruit, and therefore the efforts of the fruit-grower should constantly be directed towards a medium between these extremes.

When trees have reached a fruit-bearing size, but give no evidence of a fruit-bearing disposition, it may be assumed that their barrenness is owing to the excessive growth, and it will therefore be in order to adopt some means of checking the growth, and as a consequence, induce the trees to bear fruit.

Various measures may be pursued to effect this object, but perhaps there are none so simple and so easily applied as that of laying the orchard in grass. The absence of all culture will speedily cause the formation of fruit buds and satisfactory crops of fruit, and so long as this continues no change need be made; but if the trees become weak, from overbearing, or from want of nourishment, top dressings of manure will again renew their vigor; and, further, if the trees appear to be stunted and do not respond to surface stimulants, the grass may be plowed under and a system of thorough culture inaugurated and kept up so long as observation determines that it is the best practice to follow in the case in question.

The conditions of the trees will therefore be the best evidence as to whether the orchard should be cultivated or kept in grass. Each orchard will answer the question for itself. It is not a question as to the advisability of establishing a system based upon either expedient, although it is usually and erroneously submitted in that shape.

THE KIEFFER PEAR.

It is an old saying that the best way to prove a pudding is to eat it, and likewise the best plan to prove the value of a market fruit is to put it on the market and let the people decide. I am aware that last season there were made some famous sales of this fruit, which were duly reported but the results of those sales were not publishd. Why! because they were not in keeping with the sales; for those who purchased the Pears for their beauty and upon the recommendation of the salesman were disappointed with the fruit. I do not hesitate to say that the propagators of this variety did the fruit more harm by ascribing to it qualities it does not possess, than its enemies did in belittling it, for in the one instance the purchaser was disappointed in not finding the expected extra good qualities, while its enemies overlooked the really good ones it does possess.

There is no doubt in my mind that the Kieffer will never be classed among the fine varieties of eating Pears, but this is no reason to suppose it destitute of any merit whatever, and debarred from occupying another not less honorable position. This Pear will be sought for in large quantities by the middle class of dealers and consumers and by restaurants for cooking purposes. It is a singular fact that good cooking Pears are a scarce article in our market, and this scarcity has depreciated their consumption so much that they are found on but few tables in our city.

The Kieffer will fill this great want, for when properly managed it appears in more golden beauty than any other variety. Besides it is never false hearted or rots at the core, but has a firm juicy flesh slightly acid and not of disagreeable flavor, some think it tinctured with the Quince. I had some very beautiful ones sent to me this season, and calling the attention of some dealers to them, they all decided that they never had seen a handsomer looking Pear. These were shipped in boxes containing a trifle less than a bushel, and sold, the selected ones, for $2.75 per box and the second quality from $1.50 to $1.75 per box. They found a ready market at these prices and many more could have been sold at the same price.

For preserving, the Kieffer will also be much in demand; its large size, pure whiteness, and rich, sprightly flavor when cooked make it admirably adapted for this purpose.

Cultivators of this variety should be cautious in picking it. Being a late ripener it must not be picked too soon else it will not color well, and without being well colored, sales will not be found satisfactory, for its beauty is its chief attraction in market. It is a good keeper. I have some now, the middle of January, that are as sound as the day they were picked. Persons who fruit them the coming season should lay some away in a cool place where they can watch the coloring as well as the keeping process so that in the future they need not rush their fruit upon the market when it has to be sold for a low price.

C. W. INELL.

THE NEMAHA BLACK RASPBERRY.

This new Black-cap originated with Hon. Robert Furnas of Nebraska who considers it a meritorious variety, and with whom it has proved hardier than the Gregg. Mr. Charles A. Green who has fruited it two seasons in Western New York states that it has proved hardy, vigorous, of unsurpassed size and productive. Its season is even later than the Gregg. It is a firm berry, of good quality. Previous to the Nemaha we have had no late variety that is hardy. Early varieties ripen their wood and stop growing early, going into winter in good condition. But Gregg and Mammoth Cluster mature the wood and hold their leaves very late, and winter finds them with soft and tender wood, and they often get injured by severe weather. Especially is this the case on clayey, cold soil. On sandy soil they are much more hardy.

If the Nemaha proves to be more hardy it will be a great gain, and Mr. Furnas is very positive that it is. Single specimens have been picked, larger than from any other variety, but its average size is about that of the Gregg.

SMALL FRUITS AND QUICK RETURNS.

We are all anxious for quick returns from our investments in this country; nor is that a matter of wonder when it is considered that but few of us have the spare capital to invest for a long term without dividends. It is to be lamented, however, that we frequently ignore our best interests by not taking a little farther view into the future. While it is imperatively necessary that the successful horticulturist possess sufficient forethought and patience that will enable him to plant fruit trees that he must wait long years for his return from, he should not fail to avail himself of those varieties of fruits that yield him a quick return, during what would otherwise be considered a profitless period.

The small fruits offer this relief. Most of them give a good return the second year after planting, and some, the first. The most successful Strawberry growers now get their heaviest returns the next year after planting. Mr. J. M. Smith, the veteran horticulturist of Wisconsin, always plows up his Strawberry beds after the second year, and as he raises a crop of vegetables between the rows the first year, he hardly feels the cost of the frequent plantings.

I have obtained very fair crops of Raspberries the next year after planting. Where the ground is rich they will grow remarkably fast the first year; and by a judicious system of nipping back of shoots the second year, a good fair crop may be secured. By the way, a practical friend of mine was telling me the other day, how he managed to propagate Raspberry plants very rapidly. Before covering the tips of the stems that he wished to propagate from, he cut off the ends. This, he said, caused them to send out several shoots and a larger mass of roots than could be obtained by the old way of burying without cutting.

Dwarf Pears and Cherries often yield a good crop the second year after planting; but for the after good of the trees such early bearing in large quantities, should be discouraged.

It is very seldom that tenants of hired or rented land, set out fruits of any kind; and for this class I intend to say a word whether it availeth any thing or not. If their term of tenure is short or uncertain—so much so that they feel that they would not occupy their present positions long enough to enable them to reap an adequate return for the cost and labor of planting trees, let them try small fruits. The tenants family usually fares slim with regard to fruits and vegetables—a state of things that is not at all necessary, even if they do occupy the land of another. Long terms of renting are coming more and more into vogue now-a-days, which will enable the tenant to do much better by himself and family, in the way of producing a supply of fruit. Landlords are usually willing, too, to bear their share of the expense of starting an orchard or fruit-garden that is to be of permanent benefit to their property.

Surely, no man who is building himself a home upon his own land, will neglect to gather these home comforts about him. What if he be old, and his tenure of life well-nigh run; there are others coming after him, and what more fitting memorial can one leave behind? W. D. BOYNTON.

THE NEMAHA BLACK RASPBERRY.

THE PEACH-BORER, IN BRIEF.

The little white caterpillars with sixteen legs that eat the bark and sapwood, often girdling Peach trees just beneath the earth, and causing gum to ooze out, are Peach-borers, says Prof. A. J. Cook, in the New York Tribune. A beautiful blue, wasp-like moth lays eggs at the base of the tree in July and August. These soon hatch, and the little larvæ begin at once to feed on the bark and sapwood, When winter shuts in they will be from a quarter to nearly three-quarters of an inch long. Next June they will pupate in their own chips, and the moth comes again in July and August. The varying time of the moth's appearance explains the varying size of the caterpillars, which led Dr. Harris to suppose they were two years in developing to maturity.

The sure way to destroy these harmful borers is to dig them out in September and again in April or May. In September, because if left later they will do much damage. But some are at this time so small that they will escape notice, and hence the necessity of a further search in April. Ashes do not prevent egg-laying; the carbolic acid and soap mixture will. This should be rubbed on the base of the tree in July. I have but little doubt that the kerosene and soap mixture, placed underground close to the tree, would kill the larvæ, though I have not tried it.

NEW REMEDY FOR PHYLLOXERA.

The discovery made recently by Mr. John A. Bauer of San Francisco promises to become of great importance to grape-growers everywhere, as the substance used is cheap, and is said to be effective and to protect the vines for many years.

His remedy is half an ounce of quicksilver, mixed in particles too small to be distinguished under an ordinary microscope with an equal weight of pulverized clay, in the soil of the hole in which the vine is planted. The cost for the mercury, at the present price is a little more than a cent for each vine, or from $7 to $10 per acre.

The Flower Garden.

WINTER.

From out his robes the snow he shook,
His path of storms to trace,
To bind in ice and chiming brook
Whose bank the birds long since forsook,
Bold winter came apace.

His frown is in the cold, gray cloud,
In storms his voice outbreaks,
His hand is on the woodland proud,
When in the tempest fierce and loud,
The creaking forest shakes.

Hark! in the moaning winds he sings
A requiem, sad and low;
To Nature's perished form he brings,
And over it in silence flings,
A winding sheet of snow.

He breathes upon the yielding lake
The gentle winds no more
With their soft breath the ripples break,
Nor can the wildest tempest shake
The glittering crystal floor.

In sheltered homes, by genial fires,
Let love as warmly glow
For Him whose wisdom still inspires,
Whose bounty fills the heart's desires,
And shields us from the snow.

And though the winter's hand be strong
On dale and hill and plain.
Although in storms he sweeps along
And hushed is every streamlet's song,
He cannot always reign.

The sun with gentle beams shall chase
His icy bonds away;
So Error, boasting pomp and place,
Shall fly before the kindling face,
Of Truth's resplendent day.

SEASONABLE HINTS.

Catalogues.—To the true lovers of flowers the study of a good seed catalogue is no small enjoyment. While reading the descriptions of the various kinds, and marking this or that to be ordered, his mind's eye wanders in the prospective garden among the beauty and fragrance that is to be. Those who look at first class catalogues as mere price-lists are surely not aware of the vast amount of valuable information contained in them, and the labor and skill that has been bestowed upon their publication.

Our advertising columns contain the advertisements of nearly every first class seed house in the United States, and we advise our readers to send for these catalogues now, mentioning that they saw the advertisement in the AMERICAN GARDEN. This mention will insure prompt attention and may benefit not only the sender, but the seedsman as well as ourselves.

Muck, as found in many swamps and low places throughout the country is of more value in the flower garden than is generally supposed. We have seen such astonishing results from its use as a mulch for flower beds, that, under certain conditions, we consider it as valuable as manure. But there is a difference in muck, and it should never be used fresh directly from the swamp. In many localities muck may be dug during winter, and where circumstances are favorable, the gardener whose soil is not already very rich in vegetable matter can hardly make a better investment than to secure a plentiful supply of this material.

DESIRABLE NATIVE CLIMBERS.

Not the least attractive part of a garden would be an arbor trellis covered with a collection of indigenous climbers, many of which are highly ornamental and not less beautiful than some of the tender foreign species which require considerable care in their culture. Among the best are:

Clematis Virginiana, Virgins Bower. A doubly desirable climber on account of its profusion of white flowers in midsummer and the curious and ornamental tailed fruit on the pistillate plants in autumn. The foliage is firm and copious. The vine makes a beautiful covering for an arbor. Care should be taken to secure both sexes of the plant. In some localities the hairy fruit has given the plant the peculiar name of "Old Man Vine."

Adlumia cirrhosa, Smoke Vine. The most delicate and graceful of our desirable climbers. It grows well in a rich shady place among shrubs. The Dicentra-like flowers are very pleasing.

Celastrus scandens, Wax-work, False Bitter-sweet. The unique autumn fruit of this high climber will always make it attractive. It is commonly diœcious. In rich land, among trees, it is to be recommended.

Echinocystis lobata, Balsam-Apple. Much cultivated westward under the name of wild Cucumber. Very desirable for training over stumps and bushes.

Tecoma radicans, Trumpet-flower. A well known and well tried root climber, much prized for its hardiness and very large trumpet-like flowers.

Calystegia Sepium, Bindweed submits readily to removal and adds to the list of herbaceous twiners another desirable species. It is scarcely excelled by the Morning Glory. A double variety.

Aristolochia Sipho, Dutchman's Pipe. A robust vine with remarkably large and heavy leaves. It is hardy in Massachusetts. Over porches it gives a dense shade and presents a tropical appearance.

Humulus Lupulus, Hop. If any vine is neglected it is the Hop. It is commonly associated with bare poles in the Hop yard. The clean and careless habit of the vine as it clambers over trees and bushes, its pendent balls of green and yellow, and its disposition to take care of itself, should endear the Hop to every lover of the beautiful.

Apios tuberosa, Wild Bean. This is a perennial herb, bearing edible tubers on underground shoots, in its wild state twining and climbing over bushes and fences. Its brownish-purple flowers are very fragrant, and are borne in dense and short, often branching racemes. This is an elegant climber, nearly allied to the Wistaria, and well worth a place in every garden. **

THE MIXED BORDER.

This is the oldest style of flower-gardening; in it each plant stands on its own merits, and is not planted for its effect in a mass. It is, says George Woolson, what is known as the "old-fashioned" style of gardening, in which plants are set and cared for for the love of them. In this all classes of plants find a place, including perennials of all kinds, biennials, annuals, tender plants from the greenhouse and window, and even low shrubs. Because the contents of such a bed are varied, it need not be without order; if it is surrounded by a path, then the taller-growing plants are placed in the center, with the lowest at the edges, and those of intermediate hight between; if the path is on one side, only then the tallest plants should be at the rear. Each of these different styles of gardening has its place, and it is not necessary in advocating one to decry another, as each is best suited to particular localities and circumstances. In advocating the mixed border, we merely claim that it will meet the wants of more people in moderate circumstances, than any other kind of flower-gardening. And those who really love flowers, as individuals, can take more pleasure in cultivating them where they can reach their full development than when they are crowded into a mass, to produce a particular effect of color.

NICOTIANA AFFINIS.

This new ornamental Tobacco has given me about as much pleasure as any novelty I have ever tried. Its cultivation is of the easiest kind, and the stately habit of the plant, combined with its large pure white flowers, opening in the evening and emitting a most delicious, tuberose-like fragrance, should make it a favorite everywhere. It grows to a height of from two to three feet and should therefore not be planted too near the border of beds. For its full development it needs plenty of room and rich soil.

As an experiment I planted one of the young plants in a two inch pot, repotting it several times into larger ones up to a ten inch size. In this it attained perfection, producing flowers freely and presenting an exceedingly handsome appearance when fully grown. I never had a plant that attracted so much attention from visitors as this one; and for decorating rooms or halls at evening entertainments nothing could be more appropriate, as the flowers remain in full beauty all night, dispensing their delightful fragrance. N. T. LACKNER.

SELECTING ROSES.

Like most novices, states Capt. Moore, I began with planting a great many kinds, my information concerning them being what I could get from nursery catalogues and the few works on the Rose, which told all about their good qualities, but none of their bad ones. The latter I am constantly finding out from experience, and though costly, the knowledge will be useful in future plantings. I consider hardiness, vigor of growth, beauty of form and color, fragrance and constancy of bloom as indispensable requisites for a hybrid perpetual Rose for general cultivation in the garden. It is hard to find all these qualities in any one variety, but the nearer any one comes to them the better the general cultivator will be satisfied with it.

FASHIONABLE FLOWERS.

The Hinsdale Carnation is considerably used for young ladies' luncheon parties; and so is the lovely Grace Wilder Pink. Bon Silene buds are in high favor for the luncheons given by debutantes to their young friends. A bed of those buds forms the center piece, and the favors of this same rose are bound with pink satin sashes, so as to allow the foliage on the long stems to fall below the waist when the bunch is worn upon the young lady's dress.

PENTSTEMONS.

The genus Pentstemon is a large one including about seventy-five species which are all exclusively North American with the exception of one Northeastern Asian species. Nearly all are showy, and many of them have been largely grown both here and in Europe. Three species and a well-marked variety occur in the Northern United States east of the Mississippi. These are *P. pubescens*, *P. lævigatus* and its variety *Digitalis* and *P. grandiflorus*. The flowers of the Pentstemons are long, tubular, often bell-shaped, and commonly borne in long racemes. In color they are various shades of purple and red, occasionally varying to nearly white and of considerable brilliancy.

Unlike most of our western herbaceous perennials the Pentstemons thrive well in cultivation in the East. Many of the species have been grown in botanic gardens and on the grounds of amateurs, but with the exception of two or three, they have not become generally popular. The reason for this lack of favor may lie in the fact that many of the species are half-hardy and require cold-frame protection during winter, and perhaps also in the fact that most of them require a yearly renewal to insure a satisfactory bloom from season to season.

The perfectly hardy showy species with which I am acquainted are *P. lævigatus*, var. *Digitalis*, *P. barbatus* and its variety *Torreyi* (*P. Torreyi*), *P. diffusus*, *P. ovatus* and *P. pubescens*. Mr. C. M. Hovey finds *P. Palmeri* and *P. heterophyllus* hardy at Boston.

The var. *Digitalis* has been growing in the Cambridge Botanic Gardens for forty years. It is one of the finest of showy perennials and its white and red-striped large flowers which are over an inch long, entitle it to a place in every garden in the land. This fine plant occurs wild frequently in Illinois.

The longest cultivated of the Pentstemons is *barbatus*. The flowers are borne in profusion; they are an inch long and conspicuously two-lipped, varying in color from light pink-red to crimson. This species was grown in England seventy years ago. The first of the garden forms were obtained from Northern Mexico, but of late years it has come to our gardens from Colorado and New Mexico. It is a variable species, one of its most ornamental forms being the var. *Torreyi* which was long held to be a distinct species. This variety differs from the species proper in its greater size and deep red flowers. It is a showy and desirable plant.

P. diffusus was early found on the Columbia River by the adventurous Douglas and it has flowered in England as early as 1827. The flowers are comparatively small, but are borne in such a thick cluster and are so decided in their colors as to produce a fine effect. The species is easily propagated by rooting its decumbent stems.

P. ovatus was also first discovered by Douglas on the Columbia River about one hundred and forty miles from the Pacific ocean, and by him it was introduced into England in 1826. It is a tall species producing an abundance of rather small flowers which are deep purplish-blue in color. On account of this deep color of the flowers it is one of the most desirable of the species.

P. pubescens is the common eastern species occurring on dry banks from Canada and Connecticut to Iowa and south to Florida. Although less showy as individual specimens than the preceding species it has many advantages. Being a native of the Eastern States it endures our climate, and it readily becomes naturalized on dry and rocky banks. One of the prettiest sights I ever saw was a neglected clay cliff colonized with this plant

THE PENTSTEMON.

Several square rods where scarcely anything else would grow well were made showy by this common Pentstemon. The flowers are a delicate violet-purple.

The desirable Pentstemons which are to be treated as half-hardy perennials are numerous, and among them are to be found our most showy species. In England many of the Mexican species are grown, but they have met with less favor here where less attention is paid to floral gardening. The species which are commonly grown in this country are *P. glaber* (*P. speciosus*), *P. grandiflorus*, *P. secundiflorus*, *P. confertus*, *P venustus*, *P. gentianoides*, *P. Cobœa* and *P. centranthifolius*.

The best results are obtained from these half-hardy species by sowing the seed under a frame with little heat in December, and transferring them to the house in February. During the following summer they may give a few flowers, but the second summer they will bloom profusely. Many growers sow the seed under glass in March, but the plants do not become so strong as when started earlier. Seeds may be started in January or February and excellent results obtained. After the first full flowering the bloom will dwindle and it will probably not prove satisfactory. It is therefore advisable to start new plants every year to keep up the succession. They may also be propagated by layering.

All the Pentstemons are worthy of cultivation and more general attention. As a specialty for the amateur floriculturist there is hardly another genus of plants more inviting, and the beauty and profusion of their flowers will prove ample reward for the care given.

L. H. Bailey, Jr.

A FLORIBUND DAHLIA.

Noting in my garden last autumn a Liliputian Dahlia exceedingly full of flowers and buds, writes John A. Lord, of New Jersey, I took the trouble of counting them, when I found two hundred and twelve flowers and well formed buds. The flowers were very double and perfect, and the plant I had raised from seed sown in gentle heat on April 8th. It had been in continuous bloom since the last of July and formed one of the most attractive objects in my garden full of favorites.

ONE HUNDRED THOUSAND CHRYSANTHEMUMS.

To what extent the so-called "Chrysanthemum craze" has reached will be better understood by figures than anything else. A single firm near New York has sold during last year one hundred thousand Chrysanthemum plants of various sizes, and this is probably not one half of all that were sold here, the aggregate of which amounts no doubt to not less than a quarter of a million of plants. A few years ago, it would have been difficult to dispose of ten thousand Chrysanthemums in the whole United States.

THE PEARL TUBEROSE.

For greenhouse culture this variety, or sport is far superior to the common Double Tuberose, in out-door culture however it has been observed that it does not always perfect its flowers as well as the older kind; the experience of our correspondent Wm. M. Bowron of Tennessee, which seems to indicate a remedy for this defect, is therefore worthy of consideration.

I find, he says, that Pearl Tuberoses will open fully and be a perfect success when grown in partial shade. In the hot sun they become shabby before all the flowrets open, while in partial shade every bud on the spike opens—at least in our climate.

The Window Garden

AND GREENHOUSE.

WINDOW GARDENING FOR FEBRUARY.

Now as the days are growing longer, warmer and sunnier, plants will begin to grow and blossom more freely than they did in midwinter. Pinch in Fuchsias, Heliotropes, and others that are growing too tall or spindly. Increase the supply of water as growth and the drying influence of sunshine and warmth demand. Be vigilant and spare no insect pests. Ventilate freely in mild and sunny weather, but avoid drafts, and in ventilating do so gradually. Ventilate early and close up early. Abutilons, Marguerites and some others that have filled their pots with roots will need a little extra nourishment, give it in the way of weak liquid manure, or better still, pick out some of the surface earth from the pots, and replace with equal parts of turfy loam and rotted manure.

REPOTTING PLANTS.

Many of your plants for flowering as Tea Roses, Petunias, Fuchsias or Geraniums, if in vigorous condition, and those kept to furnish cuttings, for instance Coleuses, Salvias and Ageratums, may be the better off for a shift; but if you will have no room for them after they should be repotted, better leave them undisturbed. If you have room and convenience for them you may shake out and pot single, the cuttings of Heliotropes, Ageratums, Coleuses, Iresines, Geraniums and other summer decorative plants that you have wintered—a bunch of cuttings in a pot—but if you cannot yet take care of them leave them alone till March when you may find relief in a hot bed or cold frame.

In repotting plants use clean washed pots only, and more particularly than the outside let the inside be clean. Drain the pots with some rubble, as broken pots, brickbats or rotten stone pounded small, and over that strew thinly some of the roughest of the soil on half rotted leaves to prevent the earth from clogging the drainage.

SOIL FOR POTTING.

Turfy loam piled up for about a year, and well rotted manure are the principal material, but never hesitate for want of any particular kind of earth. Wood-soil is capital when mixed with loam, so is leaf mold, but do not use fresh muck or peat from a swamp. Some gardeners use a great deal of sand in their soils, but I fail to find much good in it if the loam is turfy and leaf soil or light manure is mixed with it; in fact for the ordinary house plants as Geraniums, Fuchsias, Carnations and the like I don't add sand.

Break up fine all the lumps in the loam, they are clay balls and worm casts, and in their unbroken state fine roots cannot derive benefit from them; don't think they are fibre lumps and will keep the soil open,—fibre lumps are unmistakable and if large need to be torn apart or chopped up. Never use soil that is wet or muddy, nor fresh or pasty manure. Cow manure from the heap is seldom fit to use before it is two years old on account of its plastic nature. Palms, Callas, Crinums, Amaryllises and other fleshy rooted plants delight in fresh loam, as thin cut sod chopped up fine. Roses like strong heavy loam. Azaleas, Heaths, Cytisus, and others having fine fibrous roots thrive the best in a rather light soil.

SOWING SEEDS.

Sow some seeds of *Vinca rosea* in a warm room. You will like the variety having white flowers with red eye the best, and in order to have good blooming plants to set out in May, you must raise your seedlings early. Sow also Verbenas, Centaureas ("Dusty Millers"), yellow Feverfew and Torenias. In sowing small seeds as Torenias, Lobelias, Begonias and the like I have known amateurs to dust the seeds on the surface of their Fuchsia and Geranium pots, and in this way raise a fuller crop than when they took every precaution to prepare separate pots for them.

While it is well to start early the above slow growing kinds in order to have strong plants by planting out time, it is far too soon to sow Stocks, Asters, Marigolds, Zinnias and the like. You may sow Cyclamen, Amaryllis, and other tender perennial plants as soon as you wish, provided you have heat to start them in. And you may sow Columbines, Larkspur, *Pyrethrum roseum* and other perennials as soon as you please if you are prepared to take care of them. The Pyrethrum and Larkspur will blossom the first year from seed, but notwithstanding oft written statements to the contrary *Columbines will not blossom the first year.*

GLOXINIAS AND AMARYLLISES.

If you have some old plants at rest and they are showing signs of growth bring a few of them to the light and give them a little water; do not force them but let them come along slowly. The same with tuberous Begonias. But do not start the colored-leaved Caladiums or the pretty flowered Achimenes before March or April. If you would like some lovely Gloxinias from July till September, sow some seed before the end of March, keep the seedlings near the light, prick them off singly and about an inch apart into pots or boxes, and, about the end of May, plant them out in a cold frame or old hot bed.

CUTTINGS.

Propagate from cuttings all the plants you can—Geraniums, Fuchsias, Carnations, Coleuses, Verbenas; stick the cuttings into the soil on the shady side of the pots the large plants are growing in, some may die but many should live. When these cuttings are rooted pot them by themselves or put them into shallow boxes. Or you may fill small or medium-sized pots with sand or sandy soil and dibble your cuttings firmly into them, and place them in a warm shady window and away from draft. Keep them moist but not wet.

WM. FALCONER.

SUCCESS WITH HOUSE PLANTS.

It is often asserted by amateurs in floriculture that some witchery or knack is necessary to be successful with house plants, which is not possessed by them. There are apparently many persons who seem to take little pains with their window gardens, yet whose plants thrive excellently and bloom throughout the season; while with others, who are continually fussing over the growth in their windows, and perchance coddling it too persistently, the result will be yellow leaves and never a flower. It is well to remember that housed plants are very much like infants,—they are entirely dependent for their well being upon the judicious care of those who nurse them.

Ladies very often fill their windows with fine plants and then consign them to the tender mercies of the parlor maid, with instructions to water occasionally, and possibly, to give them a breath of fresh air once in a while. As a matter of course, the poor things will become sickly and pine away, when their owner will wonder "What ails them," and will probably declare she "Has not the gift of making plants grow." Now common sense, careful judgment, and only a little attention daily, is requisite to have windows full of bloom and stands covered with healthy, thrifty plants. Those who do not love them well enough, however, to give them personal care need not expect to keep them in first rate condition.

SELECTING PLANTS.

Do not expect too much of plants. You may purchase one that is just entering upon its season of rest, when nature requires it to remain dormant. If it shows no inclination to put forth the new shoots, all that is to be done is to keep it clean and water it moderately. During its period of rest, the plant needs much less water, than when it is active.

Frequently plants are purchased just as their foliage is at maturity, when within a short time they will wither and droop. This is particularly the case with *Adiantums*, or Maiden-hair Ferns, which are the finest just before their fronds shrivel. A lady brought to a florist the other day the most pitiable looking *Adiantum cuneatum*, which she had purchased but a week before, when its quivering wiry stems, hung luxuriant with rich green lacy foliage. She indignantly inquired if "that was the kind of plants he kept." Like many others selecting *Adiantums*, she had picked one out for its beauty when just at its full maturity. Very soon its leaves began to turn, when it drooped, and certainly presented a most dejected appearance. Had its owner but cut off the limp fronds and borne patiently with her Fern, in a few weeks it would again have uncurled fresh fans of foliage to tremble with every wave of air.

AIR AND MOISTURE.

Fresh air, and moisture all plants must have, and the majority of them will not thrive without light and sunshine. House plants are generally kept too warm. A temperature from 55° to 70° is better than warmer for the varieties usually cultivated in windows. Give them air, but never expose to a draught, which is disastrous. If fresh air can be admitted from an adjoining room, it is safer than to open the windows at the top. Never lift them from the bottom in winter. As a rule house plants suffer from a lack of moisture in the atmosphere; this is especially true when there is furnace heat and gaslight. It is a very good plan to set pans of water on the plant stand, and to fill vases in the room with water. This makes a healthier atmosphere for people as well as plants. It is often the case that the only person in the house will have blossoms on her plants will be the cook, whose windows will be gay with Roses and Geraniums, because the steam from the boiler and kettles will provide the moisture needed by the plants in the kitchen windows.

It is an injurious habit to pass among the plants daily with a watering pot, and drown

them out. The best guide to their demands in this regard is the soil, which should be thoroughly wetted when dry. Watering should not then be repeated until the indications are that the plant is thirsty. But speedily give the drink asked for then, as one day of drought will set back growth and bloom. The water used should be of the temperature of the room, otherwise the plant will be chilled and injured by the too sudden change of temperature.

CLEANLINESS.

It is highly important to keep the foliage of plants clean, not alone for their beauty, but for their health's sake. Wash the leaves inside as well as outside, as often as they are dusty. A soft sponge and tepid water are the best for this purpose. To polish Ivy leaves, or those of Palms and Rubber trees, use soft tissue paper; but rub lightly or the leaves may be injured; it will make them like satin.

Every day pick off any dead leaves or twigs, as these but interfere with the strength of those alive. Blossoms should not be left on too long; they retard the perfect formation of others. Never permit bloom to wither on the stem.

Newspapers should be pinned about plants when rooms are swept to protect them from the dust. They can be shielded from cold in this way, if the fires get low on occasions of severe nights.

Stirring up the soil in pots will contribute to the well being of plants, but care should be observed not to dig down too deep and wound the roots.

FLORA.

BOUVARDIAS.

As window plants Bouvardias deserve more general attention of amateurs than they receive, as they are easily grown, and, with but little care, make as attractive window ornaments as any plants I am acquainted with.

Commencing in the fall with strong healthy plants potted in six or seven-inch pots, having for soil a mixture of good turfy loam and stable manure thoroughly decomposed and well mixed together—the best soil for nearly all house plants—they should be kept in a warm room, and fully exposed to all the available light from a sunny window. Yet I know a lady who keeps her Bouvardias in a room in which the temperature is never very high nor the light very bright, nevertheless her success is excellent. And although her plants do not bear as many flowers as they would if kept in a warmer room, the flowrets and trusses are much larger, last a long time in perfection, and, as they are not grown for cutting purposes, but for the ornamentation of the room, they give under this treatment as much satisfaction as any class of plants I could name. Insects do not attack the plants much under this treatment; sometimes the green fly may appear, but this can be easily removed by syringing.

Be careful not to over water; while the plants when growing vigorously, require plenty of water on all clear days, too much, by allowing them to stand in saucers filled with water, is slow but sure death. The rootlets, being very sensitive to being kept in standing water, soon rot, and it is difficult to recuperate Bouvardias when once they get into an unhealthy condition. An occasional sponging of the leaves is beneficial, also a little ammonia water when they show signs of exhaustion.

As the plants cease flowering in early spring allow them to get rather dry at the roots, then cut all the shoots clear off within two inches of the surface of the soil. They will soon start into growth, and if wanted to bloom in the flower garden during the latter part of the summer, let them grow without pinching the points of the shoots off. About the first of June plant out in a well enriched bed and they will give an abundance of flowers for several months. Small plants raised from the cuttings in spring do not give much satisfaction for summer blooming,

DOUBLE BOUVARDIA.

POINSETTIA PULCHERRIMA PLENISSIMA.

and this is one of the reasons why Bouvardias are not more cultivated than they are for this purpose, while old plants cut back and allowed to make an unrestricted growth always produce good summer flowering plants. For winter blooming, however, these young spring grown plants are most desirable.

There are single and double varieties of the different colors now in cultivation. The double white—Alfred Neuner, and double pink—President Garfield, are beautiful and well worthy of culture by all flower lovers, and the new scarlet—Thomas Meehan, will probably prove alike suitable, but not having tested it yet I cannot confidently recommend it.

Bouvardias are generally propagated by cutting up the roots into pieces about an inch or so long which are placed in the cutting bench. Shoots from adventitious eyes start soon and form young plants. This is by far the easiest and best method of propagation for this class of plants. At the time of the introduction of the double forms it was supposed that when propagated by this method, they would not retain their true characteristics, reverting to the single form, and that the only method of propagating so as to retain their double character would be by using green-wooded cuttings. This is not the case however as the varieties—Alfred Neuner and President Garfield can be propagated from root cuttings just as easy as any of the single varieties, and come true every time. The scarlet variety — Thos. Meehan—although I have not tried it can also be propagated in the same manner. The best single varieties are Davidsonii —white—Elegans—pink; and Leiantha—scarlet.

MANSFIELD MILTON.

POINSETTIAS.

For gorgeous, showy effect at this season of the year the Poinsettia stands preeminent. The genus is named in honor of Joel R. Poinsette, American minister to Mexico.

Poinsettia pulcherrima plenissima, represented in our illustration, much reduced, is a magnificent plant of comparative recent introduction, remarkable for the distinct character of its floral bracts, the size of the heads in which they are produced, and their marvelous brilliancy of color. Its bracts are gathered into clusters which fill up the center, so that the whole inflorescence is full and rosette-like in form.

The Poinsettia, says Peter Henderson, is of the easiest culture. After flowering cut back to within two buds of the old wood, take up the plants, and put them in a convenient place under a bench, and cover the roots with sand or earth, and keep dry. Let them remain until it is time to plant out ordinary bedding plants, when they should be put out in the open air, and planted in boxes six inches deep,—say six plants in each box—a foot or so apart, giving them good rich soil.

They should be taken into the house before the nights begin to get cool, in the latitude of New York by the middle of September. They may be grown to flower in these boxes, by giving them plenty of manure water; although, if wanted in large quantities, it is best to place the boxes on a greenhouse bench, knock off the sides and ends of the boxes, and fill up to the level between with soil. After the plants have become thus established, an occasional watering with liquid manure will add greatly to their growth. At no time should the temperature in the house fall below 50° at night or 70° during the day.

Lawn and Landscape.

FLOWER BEDS IN LAWNS.

The beauty of all bedding plants is best seen from above as the flowers or brightest shoots are on the terminal branches. The English have a way, to use a trite saying, of eating their cake and keeping it at the same time, in the arrangement of their large lawns. At a distance of a few hundred feet from the house a ditch is dug. The side next to the house is nearly perpendicular and deep enough so that a sheep can not leap over it. The other side is a gradual slope and this slope and the perpendicular sides are seeded to grass. Beyond this ditch, sheep are pastured adding interest to the landscape and keeping the grass closely cropped. From the house only a broad expanse of lawn is seen with no interrupting fences.

A similar method of deceiving the eye may be practiced in making flower beds. By placing them on the outer borders of the lawn and sinking the nearest edge six or more inches below the lawn, the eye beholds only flowers, instead of stems and newly worked soil. In this way long-legged Geraniums may be made to ornament, instead, as is generally the case, to detract from the beauty of the lawn.

To one who purchases each year the bedding plants he uses, this suggestion will have less force than with those who prefer to save their Geraniums and other plants from year to year. But there are benefits in sinking the edges of any flower bed so that the foliage of the newly set plants just touches the grass. It presents a finished appearance from the start, is less liable to injury from passers-by and more readily presents its beauties to the eye.

A natural and beautiful example of a sunken flower bed may be seen in any bog where the Cowslip flourishes, especially along side of railroads where the grass undisturbed by cattle shapes itself into tussocks, between which the Cowslip—naturally an aquatic plant—flourishes without becoming drawn up. In the spring after March fires have burned away the dead and frozen grass, the Cowslip springs up, just filling the little depressions with its rounded outline and bursting into full bloom, becomes one of the most beautiful objects imaginable—golden gems upon a cloth of emerald velvet.

How to protect flower beds in the lawn or garden from the intrusion of fowls is an important question with many amateur florists. Any wire arranged in the shape of a low fence around the bed is better than a fringe of sticks or paving stones, but as usually constructed in our public parks they detract grievously from the appearance of the flowers. Chickens and turkeys will not go where their walking is not tolerably plain, a simple net work of wires is therefore sufficient to protect flower beds from their incursions. The meshes may be three or four inches wide and the plants placed through them. The wire will prevent the chickens from wallowing among the plants and making thoroughfares beneath it, while the foliage of the plants will soon grow large enough to cover and hide it from view.

L. B. PIERCE.

KEEPING HEDGES.

One of the principal objections urged against the employment of live fences, or hedges is the cost of keeping them in efficient repair, for it admits of no qualification that unless they receive proper attention they will prove to be of but little value as a fence against live stock. Unfortunately our best hedge-plants, so far, says Wm. Saunders, are of strong growth, especially when young, and consequently require to be trimmed two or three times during summer, at least for several years after planting, so that in a vast number of cases the hedge is neglected and soon ceases to be serviceable.

The best hedge-plant is one that could be kept by winter trimming only, because in that season of comparative leisure it would probably receive attention, but with such strong-growing plants as the Osage Orange and Honey Locust, our two popular hedge-plants, it is impracticable to produce a close fence without frequent summer trimmings. There is one thing, however, which should be put to their credit, that after a few years, the growths will be less profuse; the weakening effect of continued summer pruning ultimately weakens the plants, so that they become easier managed. This also prevents them from sending out their roots to a great distance, so that they do not interfere with cultivated crops, an evil which soon becomes visible when a hedge is neglected and allowed to take care of itself.

When a hedge gets into a condition that one summer trimming and one winter trimming will keep it in a fairly good condition, the labor and cost is reduced to a minimum. It will also have a tendency to retard the exuberance of early summer growth, if the winter trimming is delayed until after the buds begin to push in spring. This will make a difference of several weeks in regard to summer trimming, and will prove of some importance when summer pruning is confined to one operation.

The weakest part of a hedge is always nearest the ground; the criterion of a well-kept hedge is that of thickness at the bottom; this should also be its widest part, and it should taper upwards to a point. Unless this form is strictly maintained the lower branches will gradually weaken and ultimately die out, leaving gaps which are not easily closed. Hedges which become weak and full of gaps through neglect may be renewed by cutting them down in winter to within eighteen inches or so from the ground; the plants will then branch out vigorously, and by proper pruning, soon be all that need be desired for a fence.

HARDINESS OF MAGNOLIA GRANDIFLORA.

Unquestionably the most magnificent broad-leaved evergreen tree found in North America is the *Magnolia grandiflora*, grand not only in the exquisite beauty of its flowers, but also in the rich luxuriance of its foliage, as well as in the majesty of its form.

The tree is a native of the Carolinas and the South West, and is generally not considered hardy north of Washington, but Major P. L. Freas states in the Germantown Telegraph that he has a specimen of the very sinon pure right in his lawn in Philadelphia, and that it is not only himself who has this most magnificent of the whole Magnolia family in full health and glory upon his premises. Besides being grown in several of our nurseries, there are several yards in this city in which it is grown to perfection; hence, we see no reason why it should not be seen as frequently as the Lilac or Snowball.

"The objection urged against it that the tree requires careful sheltering in winter," says the writer, "is a mistake. It needs none whatever, so far as we know. Ours was entirely open to a northern exposure, and, as it had passed through several winters, as severe as any experienced, without the slightest damage, is sufficient proof of its hardiness."

"It is fully fifty years ago that we saw the first tree of this Magnolia and desired to try our luck with it, although made to understand that it was not recommended for outdoor culture in our latitude. The small plant that we had secured grew very slowly and we became quite impatient in waiting for it to bloom. We learned, however, that it was very slow in flowering when the tree was not grafted and grew upon its own roots; but we also found that when it began to bloom it never missed a season, and that it was far hardier than when grafted. It is still standing, now for over forty years, and is apparently vigorous, having borne a partial crop of flowers the past season. We think we can therefore say quite confidently that the *Magnolia grandiflora is* hardy in Philadelphia, and that we should like to see a specimen upon the grounds of every gentleman who can appreciate one of the most beautiful floral sights in the entire catalogue."

IVY LAWNS.

In our country with its frequent summer droughts, and severe, snowless winters, Ivy does not thrive as well as in the mild, moist climate of Great Britain, and Ivy lawns are therefore known to but few among the many who are interested in gardening economy. They consist, as the name implies of Ivy only, and they offer some peculiar advantages in cases where grass lawns are apt to occasion more trouble than they are worth to the builder.

According to the Farmers' Gazette (Dublin) an Ivy lawn may be well made in one season, and if the primary operation of planting be properly performed the lawn will make itself; it will want no cutting, no sweeping, no watering, no protection from the birds that eat the grass seeds to-day, and tomorrow scratch up the tender plants, as though it were their mission to make grass lawns impossible. And when made, being, as it were, self-made, an Ivy lawn will take care of itself for any number of years; but if in need of repair or trimming, the knife, the shears, or the spade may be used with unskillful hands, and with the least imaginable cost of time, for it is not an easy thing to kill, or even to seriously injure, a lawn consisting of Ivy solely.

FRUITING SALISBURIA ADIANTIFOLIA

This beautiful coniferous tree, commonly called Ginkgo, Maiden-hair Tree, fruits so rarely here that it has been believed that it could not bear fruit on account of its being diœcious and there being no male plants in this country. However, this may be, Miss Elizabeth G. Knight of the Normal College, states that the tree fruits abundantly each year in the New York Central Park.

Foreign Gardening.

FRUITS OF THE AMAZON.

We have said in a previous paper that no berries such as we so call in the United States, are found in the Brazilian forest, and that any one lost therein would probably starve to death.

These statements are strictly true, but nevertheless there are many edible wild fruits, some of wide distribution, others found only in a very narrow limit. These are mostly the fruits of large trees and can only be obtained by cutting down the tree, often from its size a work of great labor, or by gathering the fallen fruit, but the monkeys and birds in this are usually beforehand and a wanderer would run little chance of obtaining any.

One may walk days through a Brazilian forest and find no fruits, or see no sign of animal life and yet the woods may be full of both. There is another world, if we may so call it, different from that in which he walks. Far in the air in the tops of the great trees, so tall that only with a good glass can one see the flowers or the shape of the leaves. Of this upper realm one gets a reminder in the stray feather of a bird or some fallen flower or fruit, in a delicious perfume wafted from thousands of unseen flowers, the chatter of parrots, the song of birds, or the angry cries of the monkeys, but practically it is an unknown region and must ever remain so.

The time of the ripening of the wild fruits is well known to the Indians and at the proper seasons they go to the trees to gather the fruit by climbing, or to await its falling to the ground. Of these fruits there is so great a variety that we can only describe a few. Of many we have been unable to ascertain the botanical names and to the whites they are only known by the Indian names. Most are very distasteful to the strangers, but some few are very nice.

MUNGABA.

The fruit of *Hancornia speciosa* is rightly considered one of the most delicious of fruits This tree which is found in the Amazonian delta and down the coast, and is not known in the interior, is very beautiful resembling a weeping Birch. The sap is milky, and hardened produces an inferior quality of rubber; the fruit is roundish or oblong with a skin as thin as tissue paper, about the size of a small Fig and ripens in January. It is green, yellow, often with a red cheek, full of a melting pulp, of indiscribably delicious flavor; the seeds are flat, of a brownish color, covered by a closely adhering pulp. In Peru the Mungaba is chiefly brought from the great island of Marajo, where the tree grows wild in great quantities. It is brought in long pockets made of Palm leaves which contain about two quarts which sell at the equivalent of from five to fifteen cents each; we have never seen the tree in cultivation, but seeds thrown on the ground in our yard soon produced plants.

BACOUSY.

Another fruit also from Marajo, which is the immense island which separates the mouths of the Amazon. Botanically it is *Platonia insignis*, a very lofty tree with noble foliage and large pink flowers. The fruit is somewhat oblong, the size of a large Apple, has a hard shell which contains from two to four large berry seeds covered by a fragrant pleasantly acid white pulp. It is very good but the proportion of pulp to seeds and shell is very small; the shell however, is often made into a very rich preserve. This fruit is not found in the interior, as far as we know; there is however a fruit of the same name but smaller, of two kinds, of which the pulp is sour, called *Bacoure cusnó* and *ciuma* which is found on the middle and upper Amazon; it appears to us however to belong to another family the fruit only being similar in form.

GUAGRRA.

This is the fruit of *Chrysobalanus Icaco*, sometimes called the Cocoa Plum; it is the shape and size of a large round Plum, bright yellow with white flesh, sweetish but with a rank disagreeable smell. It is usually eaten boiled for it is very astringent raw, but in either way one taste usually suffices the stranger.

E. S. RAND.

(*To be continued.*)

THE CHRYSANTHEMUM AT HOME.

The idea of turning the Chrysanthemum into a vegetable may seem a startling one to many of our readers, yet the following extract from a private letter from Mrs. M. L. Hopper, a young botanist and artist, who has been in Japan for several years past leaves no doubt that the "Golden Flower" is actually eaten by the Japanese, and who knows that Chrysanthemum Spinach may not be among the "novelties" of another season.

"Mr. Tsuda took me to a garden to see some Chrysanthemums," writes Mrs. Hopper, "I was quite mistaken in calling any of them China Asters in a former letter. Some of the kinds look exactly like the China Asters we have at home; but they are all Chrysanthemums. Mr. Tsuda says there are over five hundred varieties. Some are the size of the end of my little finger, and yellow; then some are a little larger, of a beautiful cardinal red; and still others a little larger, white, pink etc. The medium-sized ones are nearly all yellow, and these are the ones the Japs eat. They pickle them, and eat sugar or Shoyu (Japanese sauce) on them. The green leaves they boil, as we do Spinach.

"The large flowered ones are very fine, and of beautiful colors; the petals are very long and curled around. They look like pin wheels going around very fast. Each stem is trained on a stick. On those I saw there were fifteen flowers in each group. The five front ones were rather short; the next five a little higher, etc.; but the flowers all belonged to one plant, fifteen flowers to each group, seventy-five flowers to a plant. Most of them are of two colors: yellow and red, red and tan color, red and cream, etc. One side of the petal is one color, the other side of the petal another.

"Although these flowers and some others in Japan are very fine, I do not like Japanese gardening. I like a fresh green field, with some cows grazing in it, a few fine old trees, and some wild flowers, far better than a Japanese garden. The Japs call grass 'weeds,' and they will not let a bit of it grow; pull it up and throw it away. In the place of grass in the gardens they put gravel. There are no green fields in Japan, for one reason that most of the country in the interior is mountainous. These mountains are very pretty; but when it comes to a bright green, sweet-smelling flower garden, such as we have at home, there is no such thing here. The 'flavoring' is left out of every thing here, and the song and the music."

LAVENDER CULTURE IN ENGLAND.

The Lavender plant although a native of the countries around and near the Mediterranean Sea will grow as far north as Norway to latitude 60°. According to Bell's Weekly Messenger a considerable acreage of land at Grove, near Canterbury, has lately been planted with Lavender and Mint, and the result has proved so successful that it has been determined to establish extensive works on the spot, in order to carry on the process of extracting the essential oils.

It has for centuries been grown at Hitchin in Hertfordshire, and as a commercial speculation it dates back for at least sixty years.

The plants at present in cultivation do not produce seed, being propagated by slips or by dividing the roots. The crop is, however, somewhat precarious. During the severe winter of 1860 many of the plants were killed, and of late years a peculiar fungus has so decimated them that the price of the oil has, in consequence, risen considerably. The oil produced in Surrey near London, is considered better even than the imported article.

A sandy loam with a calcareous substratum is regarded as the best soil for the plant, while the most favorable position for the Lavender plots is a sunny slope, which the fogs do not reach, and where light airs blow freely, but which is not so high as to be in peril of early frosts. At Mitcham, Carshalton, and Beddington, localities all near each other, about three hundred acres are still under Lavender, and a considerable area under Mint.

The Lavender flowers are collected in August and taken direct to the still, when the yield of oil to a great extent depends on circumstances beyond the control of the grower. If June and July have been bright the result is satisfactory; but if there has been dull, wet weather during these months, only half as much oil will be expressed. The oil from the stems is ranker and less valuable than that from the flowers; consequently, the portion which first distills over is collected separately, that which appears after about an hour and a half bringing a lower price. Should the flowers be distilled separately a finer oil is obtained. But as the extra labor demanded by the operation adds about 10s. per lb. to the cost of the oil, it is not usually done, since the "fractional distillation" described, effects nearly the same end. After three years the oil—which has been mellowing up to that date—deteriorates, unless it is mixed with alcohol or redistilled.

ASPARAGUS.

ASPARAGUS IN POTS.

At the recent exhibition in Turin, Italy, a number of Asparagus forced in pots attracted considerable attention. The pots were comparatively small, and many contained each some twenty sprouts; in fact, they were crowded with them. With sufficient quantities of liquid manure, it would seem not more difficult to raise Asparagus in pots than fruit trees and Grape vines.

Exhibitions & Societies.

AMERICAN INSTITUTE FARMERS' CLUB.

The meetings of this club are rapidly increasing in interest and attendance, so that every seat in the large hall is occupied at the beginning of the discussions.

At the first meeting of the year, on January 13th, Gen. K. B. Marcy of the U. S. A., read a highly interesting and valuable paper on the first occupation of the western country by the expedition under his command. He gave a vivid description of the country, and the many dangers and privations encountered by the explorers and first settlers; and was listened to with marked attention.

Maj. H. E. Alvord, director of the Houghton Experiment Farm, who some twenty years later traversed the same ground in the government's service, spoke of the changes that had taken place during that period, and of the great obligation under which the country was to General Marcy for the admirable management of his expedition into that wild region.

Dr. E. L. Sturtevant, director of the New York State Experiment Station, addressed the meeting about the work done by the Station in determining the relations of earliness in vegetables to the state of ripeness of the seed. Careful experiments have shown that unripe Tomato seed will grow and give a gain of fifteen days in earliness over ripe seed from the same plants. Peas and Corn fit for table use will grow and produce earlier crops than ripe seed, but plants from immature seed are more feeble than those from ripe seed. The results obtained so far show unmistakably that earliness is in proportion to the state of ripeness of the seed from which the plants have been raised. The practical question to be determined is how to combine both earliness and vigor, in the same plant, and future experiments in selecting mature seed from the earliest plants grown from unripe seed are expected to furnish the desired solution.

Among other interesting things the Doctor said that seeds raised in private gardens, as well as the Station seeds grown with all possible care were not as good as the average of seeds bought of first-class seed-houses, showing how unreasonable the indiscriminate attacks against seedsmen are. Several questions asked by members were obligingly answered, but our space does not permit to give the discussions of these and other inquiries received by mail.

The exhibition table presented a bright and attractive appearance, a large part of it being covered with a magnificent collection of Carnations from Hallock & Thorpe, also many Roses, Violets, Geraniums, Eucharis and other flowers in season. Mr. John Thorpe, president of the Society of American Florists, stated it would be impossible to describe exactly the rules and laws that guided him in his work of crossing flowers; to induce as much hardiness and vigor into the seedlings was a leading object, but the main work was suggested more by intuition than anything else. This we do not doubt, but still there must be a pretty solid foundation of study and knowledge of plant physiology as a basis from which these intuitions arise in the mind.

W. C. Wilson exhibited a large and tastefully arranged basket for a table centre piece, which was highly meritorious and much admired.

At the next meeting, February 10th, Mr. Poter Henderson will read a paper on "How Portions of the Farm may be Profitably used for the Growing of Fruits and Vegetables."

The regular meetings of the Club are held every 2d and 4th Tuesday of each month at 1:30 p. m. in room 24 Cooper Union, New York. There is no charge for admission, and ladies and gentlemen interested in agriculture or horticulture are cordially invited to attend.

NEW JERSEY STATE HORTICULTURAL SOCIETY.

As usual the annual meeting of this flourishing society was well attended by the prominent fruit growers and market gardeners of the State.

Peach culture was discussed at length; stable manure was condemned by all for Peaches, potash and bone should be used instead. Severe pruning was recommended; and as the best varieties for profit all agreed on Oldmixon and Crawford's Late. The yellows were generally ascribed to poverty of the land.

Quinces cannot be grown profitably unless the best care is given; to succeed they must have plenty of manure, be mulched to keep the roots moist and cool, pruned severely by cutting back half the annual growth, keeping out the borers, and training in tree instead of bush form.

The Niagara was considered the best white Grape for market. Worden and Moore's Early are gradually taking the place of Concord, which is losing in favor.

The subject of ornamenting school grounds received considerable attention, and it was the opinion of those present that in every public school there should be at least one teacher competent to teach the elements of botany.

Many other topics were interestingly discussed, of some of which we shall make fuller mention in future numbers.

NEW YORK HORTICULTURAL SOCIETY.

Owing to the press of business in the floricultural world, incident to holiday times, no meeting was held in January. The next exhibition of the Society will take place on Tuesday, Feb. 3, at 2 p. m., in Horticultural Hall, 28 West 28th Street. Circulars and premium-lists, may be obtained from Secretary James Y. Murkland, 18 Cortlandt Street, New York.

AMERICAN HORTICULTURAL SOCIETY.

Under this name the Mississippi Valley Horticultural Society has, at its meeting just held in New Orleans, re-organized itself into a national organization, having since some time outgrown the confines of the Mississippi Valley. President, Parker Earle; Secretary, W. H. Ragan, and all the former officers were re-elected, in addition to these were elected vice-presidents for each State and Territory.

Our special report was unavoidably delayed so that we are obliged to defer it for our next issue. The horticultural exhibition, writes our correspondent, is without doubt the largest the world has ever seen.

NEW JERSEY STATE BOARD OF AGRICULTURE.

The twelfth annual meeting of the board will be held at the State House in Trenton, on Tuesday and Wednesday, February 3d and 4th. The meetings are always attended by the best and most progressive farmers of the State and are always highly interesting. Among the papers to be read and discussed are: "Insects Injurious to Vegetation," by Prof. Charles V. Riley; "Cultivation of Tobacco," by Col. James Duffy; "Agriculture," by ex-Governor A. G. Curtin; "Diseases of Animals," by Dr. D. E. Salmon; "The Farmers of New Jersey," by Amos Ebbert; "Market Gardening," by Theodore F. Baker; "Fertilizers," by Prof. George H. Cook; "Raising Poultry," by Charles Lippincott. Programmes may be obtained from the Secretary, Mr. P. T. Quinn, Newark, N. J.

NATIONAL AGRICULTURAL EXHIBITION.

The prospectus of a national agricultural, horticultural, mineral and live stock exhibition, to be held at Louisville, Ky., under the auspices of the Southern Exposition Company and the Department of Agriculture of the General Government, sets forth that while all the great expositions of the world have been designed to illustrate the progress made in manufactures, the fine arts, and the mechanical industries; the products of the soil, and agricultural machines and implements that have been displayed at these expositions, have never had sufficient prominence to give character to the exhibition. It is, therefore, proposed to hold a great exhibition in which the agricultural, horticultural, mineral and live stock interests will be the most prominent features; and which is to be essentially a Farmer's Exposition.

MASSACHUSETTS HORTICULTURAL SOCIETY.

The weekly bulletins of this model society have again made their appearance, and being always sparkling with interesting and valuable information, they are eagerly welcomed.

At the first meeting of the year, the new President, Capt. John B. Moore, whose term of office then began, delivered a most interesting address in which he gave a gratifying statement of the condition of the Society, which was never more satisfactory than at present. The financial condition of the Society must certainly be a most flourishing one, else it could not offer over five thousand dollars for prizes for the current year, viz: For flowers $2,600, fruits $1,500, vegetables $800, and gardens $200; and the appropriations for the library committee $400, committee on publication and discussion $200, and committee of arrangements $300.

At the close of the business meeting, John E. Russell, secretary of the State Board of Agriculture, delivered an elegant address on Climate.

The leading subjects announced for discussion at future meetings during the season, are: Mulching, Forestry, Herbaceous Plants vs. Bedding Plants, Old and New Roses, Fruit Growing, Garden Flowers, The Leaf, Propagation of Trees, Nomenclature of Fruits, Heating Greenhouses and Comparison of Manures.

The meetings will be held every Saturday at Horticultural Hall, Boston, at 11 a. m. All interested are freely and cordially invited to attend the regular meetings.

The Overflow.

We have such a store of good things this month that we are obliged to turn out a page full of them here as a sort of "overflow meeting."

IMPORTANCE OF THE FARM GARDEN.

Every farmer, who ever had a first-class garden, properly cared for, knows that it is a most important feature of the farm. He is aware of its usefulness; has derived pleasure and profit from it in very many ways; his wife likes it, for it gives her a feeling of independence; his whole family is healthier and happier for it, especially if the members themselves contribute something to the labor of caring for it. Its products form the most important item in provisioning the family, the most important for the health of the household, and at an inappreciably small cost. It furnishes at all times a pleasant topic for observation and conversation. What more appropriate present for a friend than a box or two of choice Strawberries? Or a dainty basket of extra early Peas or Corn? And how pleasant to sit down to dinner before a real fine collection of the very best varieties of vegetables with the satisfaction of having them all grown in one's own garden? What enjoyment in a quiet chat by a cosy fire in the winter about the year's experience in gardening and the pleasant planning in the spring with its anticipation! From first to last the garden is a constant source of inspiration and delight if conducted as it should be.

Then, the children will quicker get an insight into the wonders and "mysteries of the kingdoms of nature," from a little experience in gardening, than in ten times as much farming, and it is the way now to make the children stay on the farm by showing farming in its proper sphere as an ennobling, broadening, delightful occupation. Give them a live garden paper to encourage thought in their work and to make that work easier and progressive. Many a boy has become dissatisfied with the farm because the work was monotonous and a drudgery. The garden can easily be made a "thing of beauty and a joy," as well as the most profitable part of the farm.

Perhaps no one appreciates the advantages of a well-stocked garden, so much as the house-keeper. She knows, when an unexpected visitor comes where in a moment she can obtain a nice mess of Salads or Beets or Sweet Corn or a box of Raspberries or Strawberries for dessert. It makes her wonderfully independent and it is therefore that she appreciates its value more than the "men folks." Give the women the say, and every farm would have a good garden and the husbands themselves would be happier for it. How uncomfortable for the men to find for dinner nothing but a piece of boiled salt pork with old soggy Potatoes, and bread and butter! And how different would the same pork look were it supplemented by some crisp Lettuce, new Potatoes, a few fresh Beets, some nice Cabbage, and, for dessert a dish of Raspberries! It would often make all the difference between having good and poor help. It is stock in trade for a farmer to be called a good liver, and in no way can he so easily or cheaply raise his standard of living as by cultivating a garden.

The importance of a garden for the farmer's married helpers and especially for the laborers who have families on large farms, can hardly be overestimated. Here at a trifling expense, the employer can provide a piece of good land for the purpose, and plow and manure it. The workman will do the rest himself at odd times, some spare day, after work at night, or in the morning; and his family will help him cheerfully. It will produce the best part of the family's living the year round when carried on judiciously.

Many a farm hand have I known to sell twenty or thirty dollars' worth of vegetables and fruits, besides providing their families with all they needed. It will make him and his wife and children better contented and he will like his situation. It will keep him at home evenings and give him a stimulus for thought, when otherwise he might spend his spare time at the nearest saloon or store talking and hearing foolishness or doing worse things. And just here, let me urge that the best present to a farm hand is some good garden paper, even if he cannot read himself, he will be prompted to have it read to him, and the information thus derived will make him not only a happier and more contented man but also a more valuable one to his employers. S. B. GREEN.

RAISING ONIONS.

It is almost impossible to make the soil for onions too rich. There are few crops that will bear heavier applications of fertilizers than this. When practicable, it is best to apply only well rotted manure, working it into the surface. Yet between a choice of a liberal supply of fresh manure and no manure, I would prefer a good dressing of fresh manure direct from the barn. A heavy application of wood ashes is very beneficial if spread in the spring just before or just after planting.

When possible it is best to plow the land in the fall or some time during the winter so as to afford good drainage and promote its drying out as rapidly as possible in the spring. Of all crops earliness is most important with the onion. Therefore at the very first opportunity in the spring, just as soon as the soil is in good working condition, and the surface can be made fine and mellow I want to be ready to sow the seed. Be sure and get good seed, this is a very important part of the work. Mark the rows at least twelve inches apart and take pains to have them as straight as possible. Onions need to be cultivated when very young and as the plants at first are very small, having them in straight rows aids materially in cultivating, on this account I prefer a seed-drill. It requires less seed and sows more evenly and in a straighter line than can be done by hand. Cover very lightly not more than to cover the seed and press soil lightly upon seed.

A fine sharp-toothed rake is a good implement for early cultivation. Keep the surface as mellow as possible and allow not a single weed to grow. After the plants have made a good start thin out to two or three inches apart. The first three weeks' of growth is when they need most attention. If they are well cultivated and kept clean during this period so that they can make a rapid growth from the start, but little cultivation will be needed afterwards.

N. J. SHEPHERD.

THE ROSE GERANIUM.

I am often asked what plant I consider best for use in the house or what plant I would choose if I could have but one.

I would not like to be restricted to such a choice, but if I were, I think I should choose the Rose Geranium, for several reasons:

1st. It is a beautiful plant. It generally grows in symmetrical form. Its foliage is fine in shape and very abundant, and it is not dependent on its flowers for beauty.

2d. It is so fragrant. Every time you touch or stir it, the air is delightfully perfumed. A leaf or two in a small bouquet is sufficient to furnish fragrance which lasts long after the leaf is withered.

3d. It is so easy of cultivation. The green fly seldom gets on it, the red spider never, unless the air of the room in which you keep it is very dry. It will flourish in rooms heated with coal. The gas and dust do not injure it as they do most other plants.

4th. It is a plant which lasts for years. A flowering plant generally does not do well after it gets to be two or three years old. To have many flowers you must start new plants. You need not do this with the Rose Geranium. I have seen plants six or eight years old, quite little trees or shrubs, and nothing could be finer than such plants are for a large window. One such plant is worth a dozen small ones, even if the small ones are good ones. At any rate, it would be to me, for I like good-sized plants when well-covered with clean, handsome foliage, I become attached to a plant which has been in the house year after year. It is like a friend.

The best soil for the Rose Geranium is, in my opinion, one made up of the fibrous, rooty matter scraped from the bottom of old sods in fence corners and pastures, well-rotted manure from a barn-yard where cows are kept and loam, with a generous admixture of sand. I would combine the three first in equal parts, and to enough soil to fill an eight-inch pot, I would add a heaping handful of sharp sand, mixing the soil thoroughly. In such a compost the plant will grow robustly and rapidly, and be perfectly healthy. In heavier soils it will not. In the bottom of the pot I would put at least an inch of broken brick, to secure perfect drainage. It dislikes stagnant water at its roots.

It is desirable to keep the plant growing steadily, except at such times as you allow it to rest, which should be once a year. This can be done by giving less water, and keeping it in a cool place. When growing examine the earth in the pot frequently, and as soon as the roots have filled the soil and formed a network next to the pot, shift to a pot a size or two larger, giving fresh soil. Syringe frequently to keep off dust. No plant can be ornamental when its leaves are covered with dust. Syringing tends to preserve health.

The Rose Geranium can be raised very easily from cuttings. Inserted in clear sand, which is kept *wet* and warm, not one in twenty will fail to root. If you have no use for them in the house put them in the garden to furnish fragrance and beautiful foliage for bouquets. In the fall you can give them away to friends, or lift the roots, pack them into a box and put them away in the cellar until spring, when they can be brought up and started into growth again for use in the garden. E. E. REXFORD.

Rural Life.

SHADE-TREES ABOUT THE DWELLING.

While we do not advocate, as we notice in many places, a dense mass of foliage encompassing a dwelling, depriving it of sun and air to a great extent, says the *Germantown Telegraph*, yet, when we see so many of them in town and country almost, if not entirely, deprived of shade, when it is so necessary to the comfort of the inmates, we feel a sympathy for the neglect, want of thought in behalf of the family, or perhaps in some cases the cost in labor and a little money in providing the shade, that we scarcely know how to express ourselves in sufficiently cogent a manner in regard to it. Two or three first-class shade-trees, like the Norway or Sugar Maple, whose foliage is so dense, dark, and beautiful, in front of a dwelling, give such an air of gentle coolness and comfort in the scorching days of summer, and a calm restfulness that even the most stolid beasts of the field seek and enjoy.

In our towns and cities, no matter how closely the streets may be built up, there is always room for one or more shade-trees. In setting them out, it should be done with the utmost care, and be protected against damage by strong boxes, in order that children may not climb upon them or bend them down, or horses gnaw them, or cattle rub against them. Some people fail to set out such trees, on the plea that they will not grow along pavements, owing to want of moisture. But this is a mistake. Where a tree stands in the midst of a wide asphaltum pavement, and it is impossible for moisture to reach the roots, there would be a poor chance of its living or growing; but such is not the case in either paving with flags or bricks, where a tree will grow about as well as anywhere else.

Some object to planting trees along the street in front of their houses, for the reason that people hitch their horses to them, and they are injured or destroyed by their gnawing. This serious mischief horses will do if the trees are used for hitching-posts; but it is only reasonable to suppose that every house has a separate hitch-post, either of iron,—which have become very cheap and endure forever, and which are beyond horse-power to damage with the teeth,—or of wood, capped with galvanized steel-iron. It is well, however, to protect all trees small enough to be gnawed, which is worth being done a dozen times over, rather than be deprived of grateful shade.

But there is such a thing as having too much shade, or, rather, having too many trees, and they too near the house. In fact, a tree should stand at a distance that, while it will furnish its full measure of shade, it will at the same time permit the free ingress of the breeze. At many residences there may be noticed old, ragged, worn-out Spruce trees, that afford neither shade nor adornment, as well as many overgrown old Willow trees, all of which should be rooted out.

We repeat that we know of no trees so beautiful and umbrageous, and maintaining their symmetry, health, and usefulness equal to the Norway and Sugar Maples. The former is to be preferred for the yard or lawn, the latter for the street.

THE ENGLISH SPARROW PROBLEM.

At the recent meeting of the American Ornithologists' Union, the English sparrow was again denounced. The committee to whom this subject was intrusted collected, in a systematic way, from all the sources at their command, evidence for or against the bird.

The conclusion having been reached, comments *Forest and Stream*, that the English sparrow is in all respects a most undesirable addition to our fauna, the question arises, what is to be done to remedy the evil which the hasty and ill-considered action of a few individuals has brought upon us? This question is more easily asked than answered. We know that in Australia much ingenuity, time, and money have been unavailingly expended in efforts to rid the country of this curse. The sparrow's fecundity is something startling, and it seems impossible to hold the species in check.

One method which, so far as it goes, will prove very effectual, is to encourage those small species of predatory birds which destroy the sparrow for food. Such are the shrikes, the screech-owls, and the smaller hawks, the sparrow-hawk and sharpshin. We have no sympathy with the sentimentalists who would shed tears over the spectacle of the sparrow in the claws of a hawk, and it is certain that there is no more efficient method of getting rid of the sparrows than by permitting their natural enemies to destroy them. A shrike or a little owl will, if undisturbed, spend a whole winter in a locality where sparrows are abundant, and will during that time kill a great many.

It would be interesting to learn whether any efficient plan for destroying the sparrows has yet been devised. It is not now so much a question of getting rid of the sparrows, as of checking their increase before they spread over the whole land and kill or drive away all our native birds.

Household Pets.

REMARKABLE INTELLIGENCE AND HEROISM OF A DOG.

The large Newfoundland dog Hock, belonging to the St. Elmo Hotel, in the oil-town of Eldred, Pa., was known throughout the northern oil-field for its great strength and almost human intelligence. The porter of the hotel, a kind-hearted but intemperate person, was an especial favorite with the dog. The porter, a small man, slept in a little room back of the office. The dog slept in the office. On the night of September 18th last the porter was drunk when he went to bed, and soon fell into a heavy sleep. Sometime in the night he was awakened by the loud barking of Hock, who was jumping frantically on the porter's bed and seizing the pillow with his teeth. The still drunken and drowsy porter tried to make the dog go away, but the animal persisted in his efforts, and it finally dawned on the befuddled mind of the porter that the house was on fire.

His room was full of smoke, and he could hear the crackling of the flames. He sprang from the bed, but was still so drunk that he fell to the floor. The faithful dog at once seized him by the coat collar, the porter not having removed his clothing on going to bed, and dragged him out of the room and half way to the outer door of the office, when the man succeeded in getting to his feet, and, unlocking the door, staggered into the street. The fire was rapidly spreading over the building, and the hotel was filled with guests, not one of whom had been aroused. The dog no sooner saw that his helpless friend was safe than he dashed back into the house and ran barking loudly upstairs.

He first stopped at the door of his master's room, where he howled and scratched at the door until the inmate was made aware of the danger and hurried out of the house, as there was no time to lose. The dog gave the alarm at every door, and in some instances conducted guests down-stairs to the outer door, each one of these, however, being a stranger in the house, which fact the dog seemed to understand in looking out for their safety. All about the house seemed to have lost their heads in the excitement, and it is said that the hotel dog alone preserved complete control of himself, and alone took active measures to save the inmates of the house.

In and out of the burning building he kept continually dashing, piloting some half-dressed man or woman down-stairs, only to at once return in search of others. Once a lady with a child in her arms tripped on the stairs while hurrying out, and fell to the bottom. The child was thrown on the floor of the hall some distance away. The woman regained her feet and staggered in a dazed way out of the door, leaving the child in the midst of the smoke that was pouring from the office door. The brave dog saw the mishap, and jumping in through the smoke, which was now becoming almost impassable, and seizing the child by its night-clothes, carried it safely out.

Notwithstanding this rescue, the mishap that made it necessary led to the death of the noble animal. The mother of the child, on being restored by the fresh air, first became aware that the child was not with her, and crying out wildly that "Anna was burning up in the house!" made a dash for the building, as if to rush through the flames to seek her child. Hock had already brought the little one out, but it had not yet been restored to its mother. The dog saw the frantic rush of the mother toward the burning building, and heard her exclamation that some one was burning up in the house, and, although the building was now a mass of smoke and flames inside and out, the dog sprang forward, and as a dozen hands seized the woman and held her back from the insane attempt to enter the house, disappeared with a bound over the burning threshold. The faithful animal never appeared again. His remains were found in the ruins.

There is no doubt in any one's mind that but for the intelligence and activity of Hock the fire in the hotel would not have been discovered in time for a single inmate to have escaped from the building with his life; and that the noble animal understood from the half-crazed movements of the child's mother that there was still another one in danger, and to rescue whom he gave his own life, is accepted as certain. The remains of Hock were given a fitting burial, and his loss is regretted as that of a useful citizen might be.—*Scientific American.*

OUR BOOK TABLE.

Orange and Fruit Culture. Special demands for plant food to produce vigor and health of tree as well as highest quality of fruit, dangers from injudicious fertilization, etc., issued by the Mapes Formula & Peruvian Co., New York. A pamplet of forty pages containing a large amount of information of value not only to the orange grower, but to every farmer and gardener.

Extra Tropical Plants, by Baron Ferd. von Mueller, Published by G. S. Davis, Detroit, Mich. This elegant octavo volume of nearly five hundred pages, contains an alphabetically arranged list, with descriptions of plants which may be reared in the forests, fields or pastures of the temperate geographical latitudes. The work, originally intended for the Australian continent use mainly, has been rearranged and largely supplemented with special reference to North America. The author, who is one of the most eminent and renowned living botanists, has here condensed into a comparatively small volume, not only the results of his own valuable experience on the acclimation of plants but also a great amount of information so widely scattered through rare and voluminous works as to be accessible to but few persons.

In a separate list at the close of the volume all the genera enumerated are grouped together according to the products which they yield, facilitating the tracing out of any series of plants regarding which special economic information may be sought. In addition to this is given an index according to the geographic distribution of the respective industrial plants. As a work of reference this book is of great value to every one interested in geographical and industrial botany; even now when hastily glancing over its pages we find many items of information for which we had searched through many other volumes without success. The publishers deserve high credit for bringing this work within reach of the American public.

How to Propagate and Grow Fruit, by Charles A. Green, editor of Green's FruitGrower, Rochester, N. Y. A very "taking" book, has been produced by Mr. Green. Facts, experience, brightness, humor, telling argument and earnest purpose fill its pages from cover to cover. Here are gathered many of the best things that have appeared in the Fruit Grower, and we rejoice that Mr. Green's excellent work has here found more permanent form. The propagation of all the large and small fruits of northern culture is clearly treated. Budding and grafting have full attention. Soils, varieties, implements, manures, and culture are fully discussed. Transplanting, pruning, harvesting, storing and marketing are well preached. The chapters on Advice to Beginners, Certainties of Fruit Culture, Evaporating Fruit, Grape Talk, How I Began Fruit Growing, etc., will be highly appreciated. It has 64 pages, over 50 illustrations and 2 colored plates. Price 50 cents; cloth $1.00.

Great Potato Yield, Report of the Committee appointed to award the seven hundred dollars cash premiums offered by the Bradley Fertilizer company, Boston, Mass., and Rochester, N. Y., for the largest yields of potatoes grown from one pound of seed, with the use of their fertilizers.

BOSTON, MASS., December 30th, 1884.

The undersigned, having been appointed a committee to award the premiums of seven hundred dollars offered by the Bradley Fertilizer company for the largest yields grown from one pound of "Dakota Red" Potatoes, with the use of their Fertilizers, after a careful examination of the statements subscribed and sworn to by the competitors and their witnesses, have this day awarded premiums as follows:

1st premium, $300, to H. C. Pearson, Pitcarin, N. Y., yield 2,558 pounds; 2d premium, $150, to A. Rose, Penn Yan, N. Y., yield 2,349 pounds; 3d premium, $100, to C. F. Thompson, Lee, N. H., yield 2,118 pounds; 4th premium, $75, to Charles C. Miller, Akron, O., yield 1,677 5-7 pounds; 5th premium, $50, to G. W. P. Gerrard, Caribou, Me., yield 1,638¼ pounds; 6th premium, $25, to E. H. Vicks Rochester, N. Y., yield 1,320½ pounds.

William Hamilton, Caledonia, N. Y., President of Western New York Agricultural Society. James S. Grinnell, Greenfield, Mass., formerly Acting Commissioner of Agriculture, at Washington, D. C. John E. Russell, Boston, Mass., Secretary of State Board of Agriculture of Massachusetts. I. P. Roberts, Professor of Agriculture at Cornell University, Ithaca, N. Y.—Committee.

These enormous yields of potatoes, grown from one pound of seed by careful cultivation and with the liberal use of a high grade fertilizer, are worthy the consideration of all interested in the culture of the potato or in the possibilities of reproduction in the Vegetable Kingdom. 2,558 pounds from one pound of seed greatly surpasses, we believe, anything heretofore recorded in the culture of the potato. That more than a ton and a-quarter, or 42½ bushels, should be grown from one pound of seed is truly marvellous. One bushel of seed at this rate would produce 2,558 bushels, and eight bushels, the amount of seed commonly used per acre, would produce 20,464 bushels.

ANSWERS TO CORRESPONDENTS.

Grape Myrtle Insects. E. O. W. Loogootee, Ind., The specimens sent are a species of scale. If there are only a few on the plants, they may probably be rubbed or washed off with whale-oil soap suds. But the sovereign remedy for all scale insects is the kerosene emulsion. This is made by mixing two parts of refined kerosene with one part of sour milk. This must be thoroughly churned until a butter is formed. This butter will keep a long time in closed vessels, and may be diluted *ad libitum* with water when needed for use. By spraying this solution upon the insects every one will be killed without injuring the plants, yet it is well to syringe them afterward with pure water.

Honey Plants. Apis. Many of our native trees and plants furnish excellent bee pasturage. Of herbaceous plants adapted for cultivation A. H. Newman recommends in his catalogue: Melilot or Bokhara Clover, White Clover, Atsike Clover, Catnip, Mignonette, Spider Plant (*Cleome*), Simpson's Honey Plant (*Scrophularia*).

Wigandia and Ipomœa. J. W. B. Flushing, L. I. Seed of Wigandia may be procured from any first class seed house. *Ipomœa noctiflora* was introduced by Peter Henderson, we believe, who offers it in his catalogue.

Propagating Norway Spruce. Mrs. S. G. M., Wylliesburg, Va. These, as nearly all coniferous trees, are best propagated from seed, but it requires more care to raise evergreens from seed than any other class of trees. The seed must be sown very early in spring, in very fine, rather compact soil, and the seedlings as soon as they appear above ground, have to be protected entirely against sun for the first few weeks, and partially so throughout the first summer. In a small way it is hardly worth the trouble to raise seedlings as small trees can be bought very low.

Red Spiders on Chrysanthemums. R. M., Easton, Pa. Tobacco water is the best remedy for this insect. The solution should be of about the color of strong coffee, and when used, as warm as the hand will bear, syringed over the entire plants, the lower side of the leaves too. One application a day, repeated two or three times on successive days is generally sufficient.

CATALOGUES RECEIVED.

James M. Thorburn & Co., New York, descriptive catalogue of Seeds for the Vegetable Garden, Flower Garden, Lawn, Farm and Nursery. This is without exception the most substantial-looking, business-like catalogue on our table neat and attractive and yet without any unnecessary show whatever. While it is said to contain the largest collection to be found in "the world," its arrangement is so systematic that everything can be found at a glance. The cultural directions and tables of seeds to be sown each month are prepared with great care, and are of special value to every gardener.

Porter & Coates, Philadelphia, Pa., Catalogue of new and standard Publications, comprising Fiction, History, Biography, Travels, Poetry, Agriculture, Religion, School and Juvenile Books, etc.

Dubois-Soisson, Orleans, France, Price-list of Roses comprising many new varieties introduced by this firm and all the best older kinds.

Benjamin Hammond, Fishkill, N. Y., Catalogue of Pure Paints, especially adapted for cottage and farm use. Also circular of Slug Shot, giving numerous endorsements about the efficiency of this excellent insecticide. These works were formerly located at Mount Kisco, N. Y.

Peter Henderson & Co.'s Manual of Everything for the Garden, 35 and 37 Cortlandt Street, N. Y. This firm has excelled itself this year in the beauty and excellence of its catalogue, as a more handsomely and tastefully gotten up seed and plant catalogue has certainly not before been published anywhere. It is embellished with several highly artistic colored plates, and contains, as its title indicates, everything for the garden: seeds, plants, implements, fertilizers, etc. No one interested in gardening can afford to be without this catalogue.

Samuel Wilson, Mechanicsville, Bucks Co., Pa., Price List and Catalogue of Garden, Field and Flower Seeds and Vegetable Plants. Specialty, every package is stamped with the year in which the seed was grown.

Niagara White Grape Co., Lockport, N. Y., Descriptive Circular and announcement of the decision of the company to offer vines for sale to the general public without restriction.

Burpee's Farm Annual, W. Atlee Burpee & Co., Philadelphia, Pa. This is one of the best and most complete Catalogues of Garden, Farm and Flower Seeds issued, and in striking novelties richer than any. Prominent among the latter are Burpee's Mammoth Ironclad Watermelon, New Red China Squash, Empire State Potato, Mammoth Pompeii Onion and Burpee's Ruby King Pepper.

Beach & Co., Rose Growers and Florists, Richmond, Ind. Descriptive and Illustrated Catalogue of all the most desirable Roses under cultivation; also a general assortment of Greenhouse and Bedding Plants.

C. E. Mattison & Co., Jacksonville, N. Y., Wholesale Price-List of Fruit and Ornamental Trees.

Ant. Roozen & Son, Overveen, near Haarlem, Holland, sole agent for the United States, J. A. Veer, 318 Broadway, N. Y., Catalogue of Gladiolus, Dahlias, Ranunculus, Anemones, Iris, Begonias, Gloxinias, Amaryllis, and other Dutch and Foreign Bulbs. This house which offers as complete and select a collection of bulbs as are found anywhere, has taken a great step in advance of other European firms, by giving the prices, which are very low, in American money, and by delivering all goods ordered in New York free of duties, expressage, packing or expense of any kind, thus enabling the buyer to deal directly with the grower.

Plant and Seed Company, St. Louis, Mo. Illustrated and Descriptive Catalogue of Vegetables, Pears, Field, Flower and Tree Seeds, Seed Potatoes, Implements, Fertilizers, etc. A large and handsome catalogue, containing a complete list in every department, and many valuable cultural directions.

D. M. Ferry & Co., Detroit, Mich., Seed Annual for 1885. This is decidedly more beautiful and valuable than ever. The descriptions and illustrations of the large seed farms and trial grounds of the firm are highly interesting, and the hints on the formation and management of gardens it contains cannot fail to be of great service to all who garden, whether for profit or pleasure.

Alfred H. Newman, 923 West Madison Street, Chicago, Ill., Illustrated Catalogue of Bee Keeper's Supplies, comprising everything requisite to bee culture.

A. H. Pomeroy, Hartford, Conn., Illustrated Catalogue of Scroll Saws, Fancy Woods, Clock Movements, Mechanics Tools, Pocket Cutlery, etc.

Vick's Floral Guide is one of the handsomest of all the seedmen's publications. The 1885 issue is a beauty of 120 pages, full of illustrations and descriptions of a great host of new and old garden favorites. James Vick, Rochester, N. Y.

Landreth's Rural Register and Almanac, 101st year, is a reminder of a remarkably long business life for this new country, and of a reputation for good seeds that must have been good to have withstood the test of a century, of planting in all sections.

Hiram Sibley & Co.'s Catalogue of Vegetable, Flower and Field Seeds, is worthy of emulation in the strong ground taken against the confusion of names of field and garden plants. It is compact, plain and sensible.

A. D. Cowan & Co., New York, issue a handsome and valuable Catalogue of seeds and plants. It contains a remarkably large collection in a small space and is readable and attractive.

Joseph Breck & Sons, Boston. This Catalogue is of an old house, established 1822, has an interesting portrait of the founder. Their specialties this year are the Pearl of Savoy Potato, and the Angel of Midnight Corn. $200 are offered in prizes.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED FOR THIS COLUMN.

Joseph Breck & Sons, the well-known seed and implement house of Boston, have secured the services of Mr. J. H. Munson, late with Hiram Sibley & Co., to take charge of their seed department. Mr. M. brings seven years of valuable experience to his new position.

W. W. Rawson, a prominent seed grower and market-gardener of Arlington, Mass, has purchased the seed business of Everett & Gleason, 34 South Market Street, Boston, and is conducting it with great energy.

Messrs. B. K. Bliss & Sons of New York, have the sympathy of the entire horticultural community, in their financial embarrassment, which has caused a partial suspension of business until arrangements can be made for the settlement of the troubles. Messrs. Bliss & Sons have an excellent reputation for reliable goods and square dealing.

The new catalogues of seedsmen and nurserymen show but few "novelties," and prices of the standard varieties are as low as even these hard times can demand. Recent cold weather has improved the seed trade considerably in point of orders received.

Nurserymen report the prospects excellent for many of the new varieties, especially of the Niagara, Dutchess, Poughkeepsie Grapes; the Marlboro, Hansel and Nemaha Raspberries; the Parry Strawberry.

Henderson's White Plume Celery is said to be having a great run among gardeners and amateurs.

Mr. A. D. Cowan, for many years with Messrs. B. K. Bliss & Sons, reports a lively seed trade and seems to enjoy the confidence of a large circle of customers. Mr. W. H. Carson, of long experience in the seed trade, and Mr. T. V. W. Bergen, a skilled seed grower, are associated with him under the style of A. D. Cowan & Co., doing business at 114 Chambers street, New York.

GOOD LUCK.

Good Luck to The American Garden family of readers. Good fruit, good flowers, good vegetables, good gardens, good lawns, good health, good profits and good pleasure to all who read and act intelligently.

The Publisher's Corner.

TO STRANGERS AND CHANCE ACQUAINTANCES OF THE AMERICAN GARDEN.

Several thousands of you will receive this number of THE AMERICAN GARDEN as a compliment to your interest in horticulture. Please examine it carefully. * * * (Pause for examination.) * * * Now how do you like it? Is it worth $1.00 a year to you? Isn't there $1.00 worth in this one number? "Yes?"

Then of course you want to subscribe for a year. And you will find enclosed a subscription blank, which will save time and bother. You have only to enclose a dollar bill (It is quite safe in the mails now), select a present of seeds or plants (worth 25 cents to $5.00) from **List 2** on page 37, write your name and send us the order. The seeds will be sent at once, the plants in spring unless wanted now, and THE AMERICAN GARDEN every month in the year.

And you will get many times you money's worth, and be helping to promote the cause of good fruits, nice vegetables, beautiful flowers and rural improvement, by supporting the only independent, popular, special journal of horticulture in America.

WHY DO WE DO IT?

Why do we make such offers for new subscriptions as appear on this page? Because we want to put THE AMERICAN GARDEN into the hands of every gardener, fruit-grower, and amateur cultivator of flowers, fruits or vegetables in North America. Once acquainted with its merits, a large proportion of them will become permanent subscribers. And because the liberal seedsmen, nurserymen and florists have agreed to furnish us with these seeds and plants (*of first quality only*) at about cost price, in order to encourage the publication of a first-class independent horticultural journal, such as THE AMERICAN GARDEN.

Now if you, kind readers, as friends of this cause, will show your interest by speaking a good word for THE AMERICAN GARDEN and telling of our offers of choice seeds and plants, its success will be assured.

"HOW THE FARM PAYS."

In our general 30-days reduction for clubs we offer to send this new book to any one sending us only 3 subscriptions at $1.00 each. The retail price of book is $2.50. See review in December number.

CHOICE SEEDS AND FRUIT AND FLOWERING PLANTS FOR ONLY THE AMERICAN GARDEN SUBSCRIBERS.

For Good Words Spoken in a Good Cause.

Dear Readers.—We know that you speak many good words for THE AMERICAN GARDEN, and we propose to meet you more than half way. Now if you will just secure the subscriptions of one, two, or more, of your neighbors or friends we will send to you in return for your kindness:

Offer open for 30 days.

LIST 1.

For one *new* subscriber at $1.00 each, your choice of **$1.00 worth of seeds, or of fruit, ornamental and flowering plants or trees** from the catalogue of *any* seedsman, nurseryman or florist who advertise in the AMERICAN GARDEN; except "special offers" of the dealers. Two subscriptions will give you $2.00 worth; five subscriptions $5.00 worth, and so on.

OR

For one *new* subscriber at $1.00, *six* strong plants of the famous **Marlboro Raspberry** (retail price 35 cts. each.) Or a strong plant of the famous **Niagara White Grape** Or any **four** of the items mentioned under **List 2.**

For **two** *new* subscribers at $1.00 each. two strong plants of the **Niagara White Grape** (retail at $2.00 each). Or any **ten** of the items mentioned under **List 2.**

OR

You can take your choice of any of the presents offered in **List 3.**

This offer is **ONLY FOR OUR SUBSCRIBERS,** but,

Any person not a subscriber who wishes to take advantage of the above liberal offers has only to *add* his or her own name to the number required, and select a present for himself from **List 2.**

Every new subscriber at $1.00 has the privilege of our seed and plant offers in **List 2.**

This offer is necessarily limited to 30 days from date of receiving this number of the magazine by our subscribers.

How to do it. Send to your seedsman for his catalogue. Select the seeds wanted. Get subscriptions enough among your neighbors to equal the amount of seeds wanted. Then send us the list of seeds and the subscriptions. We will order the seeds from the seedsman sent direct to you, and and pay for them ourselves, and enter the subscriptions on our books.

CHINESE YAM.

Many people would like to try this very old but little known, though much written of vegetable. Dr. Hexamer, the editor, grew a few of them last year which he wishes to distribute among THE AMERICAN GARDEN family. We therefore offer to any one who will send us a subscription (at $1.00) other than his own, 50 good bulblets of the Chinese Yam, sent postpaid; or 200 for 3 subscriptions. (Cost at retail $1.50 per 100.)

We quote from a recent description:

"A well-grown root will measure 2 feet in length and 2½ inches in its broadest diameter, and its quite hardy, remaining in the ground over Winter without protection. The flesh is remarkably white, and very mucilaginous in its crude state. They may be boiled or roasted, and when cooked possesses a rice-like taste; are quite farmaceous, nutritive and valuable for food. It is also a desirable climbing plant. A few tubers planted near a door or window, and the vines trained over and about it, make an ornament worthy the admiration of all. The flowers are numerous, and have a cinnamon fragrance; but the vines do not blossom until the roots are two years old. There is scarcely any difference, perceptible to the taste, between a Chinese Yam, when properly cooked, and the potato, though the yam is much whiter and finer grained."

FRUIT FACTS AT FINE FIGURES.

Mr. Chas. A. Green, that pleasing writer on fruit culture, has produced a remarkably sprightly and valuable book on "How to Propagate and Grow Fruit," as will be seen by the review under "Our Book Table." Mr. Green also edits that bright and interesting quarterly, Green's Fruit Grower. The price of the book is 50cts; of the Fruit Grower 50cts. We send the book, the *Fruit Grower* and THE AMERICAN GARDEN, all for $1.20.

THE NIAGARA WHITE GRAPE AND THE MARLBORO RASPBERRY.

We believe that no such liberal offer of the above two famous and valuable new varieties has been made as that which we make in another column. Just think of it! A $2.00 Niagara Grape vine, No. 1 in quality, under seal of the Niagara White Grape Co., in return for only the few words required to get one new subscription from a neighbor for THE AMERICAN GARDEN!

Or *six* strong plants of the Marlboro Raspberry direct from the originator for only *one* new subscription!

Please read the offers, and then please treat yourself to these valuable plants.

ABOUT ADVERTISEMENTS.

The advertisements of a journal like THE AMERICAN GARDEN are of special value to its readers, as they serve as a directory of the reliable houses with which it pays to trade. At this season our readers are especially interested in the cards of the seedsmen, nurserymen, and implement and fertilizer dealers. This month we present a striking array of advertisements of this class. We take pleasure in calling attention to their attractiveness and high character.

If subscribers pay the cost of printing THE AMERICAN GARDEN *we are satisfied. Hence advertisers are just as essential to its life as are subscribers, and they materially help to furnish funds which enable us to put the subscription price so low as it is. Therefore you will greatly help* THE AMERICAN GARDEN *by mentioning it when writing to advertisers, any of our advertisers.*

Further, our advertisers know the high character of THE AMERICAN GARDEN *family of readers, and are more certain to be prompt and liberal if they know you are a reader of this journal. Therefore, please mention* THE AMERICAN GARDEN.

OUR CONTRIBUTORS.

We do not boast of correspondents by the hundred, but we do claim many of the best practical horticulturists as regular and occasional writers for THE AMERICAN GARDEN. Following is a partial list.

P. M. Augur,	P. B. Mead,
L. H. Bailey, Jr.,	Mansfield Milton,
W. C. Barry,	Chas. E. Parnell,
P. J. Berckmans,	S. Parsons,
W. M. Bowron,	L. B. Pierce,
W. D. Boynton,	Susan Power,
W. H. Bull,	P. T. Quinn,
F. D. Curtis,	E. S. Rand,
"Elm,"	W. H. Rand,
Wm. Falconer,	E. E. Rexford,
A. S. Fuller,	E. P. Roe
H. Gillette,	J. B. Rogers,
Dr. E. H. C. Goodwin,	H. J. Seymour,
J. H. Hale,	N. J. Shepard,
Dr. B. D. Halstead,	Chas. H. Shinn,
Peter Henderson,	Jean Sisley,
Josiah Hoopes,	J. M. Stahl,
Dr. J. H. Hoskins	E. D. Sturtevant,
Gerald Howatt,	M. C. Weld,
J. Jenkins,	Marshall P. Wilder,
J. T. Lovett,	E. Williams.

THE

American Garden

Presents to every Subscriber.

Though we do not believe in premiums given to induce people to pay a dollar for a periodical worth many times that amount, yet in the present competition among publishers we are impelled to offer these inducements in order to get people acquainted with a magazine which they are likely to stick by for many years thereafter. Our old subscribers require no such inducements, and are renewing promptly, but we believe in treating all alike, hence we send these presents to all who will tell us their choice.

These presents are all sent by mail prepaid, except as stated.

If you, or your wife, or daughter, or son, or friend, wish to earn money easily, you and they can do it by soliciting subscriptions among your neighbors for *The American Garden* on the terms below offered. If you don't want the premiums offered for clubs, we give cash commissions as follows: For $5 we send 6 copies one year; for $7.50 we send 10 copies one year.

LIST 2.

A PRESENT TO EVERY SUBSCRIBER TO

The American Garden

We will send free, postpaid, to every subscriber at $1.00 his choice of one of the following lots:

SEEDS.

No. 1. *Wild Garden Seeds:* half-ounce packet of 100 varieties choice flower seeds; cost $5.00 in single packets.
No. 2. *Pansy, Perfection:* splendid, large, vigorous.
No. 3. *Single Dahlias:* seeds of 100 choice varieties.
No. 4. *Hollyhock:* choice double mixed.
No. 5. *Balsam, White Perfection:* large, pure white, Camellia formed, good for pot culture.
No. 6. *Everlasting Flowers:* seeds of 12 distinct sorts.
No. 7. *Ornamental Grasses:* seeds of 12 best varieties.
No. 8. *Pea, Bliss's Ever Bearing:* 1 packet; new, very prolific, excellent quality.
No. 9 *Pea, Bliss's Abundance:* 1 packet; new, early, dwarf, very fine.
No. 10. *Chou de Berghley:* 1 packet; new vegetable here, hardy.
No. 11. *Onion, Giant Zittau:* 1 packet; from Europe, handsome, enormous size, pleasant flavor.
No. 12. *Water Melon, American Champion:* 1 packet; highly recommended.
No. 13. *Potato, Dakota Red:* 1 tuber: a promising new sort; late; very prolific: of high quality.
No. 13A. *Marlboro Raspberry:* 1 strong plant of this famous new sort: from the originator.
No. 13B. *Parry Strawberry:* 3 plants; new; very large, beautiful, high quality, perfect flower. (Price $2.50 per dozen).

PLANTS AND BULBS.

No. 14. *Tritoma uvaria* (Red Hot Poker Plant, or Flame Plant): one of the best hardy plants.
No. 15. *Calla Æthiopica* (Lily of the Nile): a strong root of this stately plant.
No. 16. *Clematis crispa:* beautiful, new, flowers 1 to 1½ inches across, lavender blue and white, delicious perfume.
No. 17. *Tigridia grandiflora alba* (New white Tigridia): a splendid acquisition.
No. 18. *Lily of the Valley:* 6 flowering crowns of these dainty plants.
No. 19. *Clematis coccinea* (Scarlet Clematis): grows 8 to 10 feet in one season, coral red flowers.
No. 20. Choice of 50 cents' worth of seeds from the catalogue of *any* seedsman advertising in THE AMERICAN GARDEN.

EARLY ARLINGTON CELERY.

This new *early* celery will be described and illustrated in our next issue. It is claimed to be an improvement on the old Boston market in earliness and hardiness. We are enabled by the only grower of the seed to offer a 25 cent packet to any person who will send us one 6-months subscription (at 50 cents), or three packets (value 75 cents) for only one yearly subscription at $1.00.

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We offer a choice from any of the following valuable articles to all who will send the number of subscriptions named with each article. Everything described is **first-class** in every way, and **can be fully relied upon.** Great care has been exercised to offer none but the *best* and none but those possessing **great merit.**

Almost any one can in a few hours gather names enough to get some valuable needed article **Without Expense.**

REMEMBER, that EVERY SUBSCRIBER in the clubs will receive one of the valuable presents of seeds and plants *above* enumerated, if asked for when the subscriptions are sent. Address all orders to

E. H. LIBBY,

NEW YORK, or GREENFIELD, MASS.

LIST 3.

Greatly Reduced Rates for 30 Days.

If you are a subscriber, see list 1 on page 36.

A. **Niagara White Grape:** We will give a strong plant of this famous new white grape, unquestionably the finest white grape for general purposes yet produced, for only 2 subscriptions at $1.00 each. Sent by mail prepaid.
For 5 subscriptions at $1.00 each, we will send 3 strong plants. (Lowest retail price, $2.00 each.)

B. **Marlboro Raspberry:** The largest early raspberry; new; superior as a market berry; now creating much interest among fruit growers. For 10 subscriptions at $1.00 each, we will send 40 strong plants; for 30 subscriptions, 125 plants.

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One doz. *Hansell*, earliest and best of all raspberries.
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Half doz. *Lucretia Dewberry*, large, early, hardy, prolific.
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D. **Novelty Collection No. 2.** All for 7 subscriptions at $1.00 each. (Regular price $10.00).
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Half doz. *Parry Strawberry.*
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One *Spanish Chestnut*, 3 to 4 ft.
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One *Kentish Cob Filbert*, 2 to 3 ft.
One *English Walnut*, 3 to 4 ft.
One *Dwarf English Walnut*, 2½ ft.
One *Pecan Nut*, 2 to 3 ft.
One *Shellbark*, 3 to 4 ft.
One *Soft Shell Almond*, 4 to 5 ft.
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Sent by express only.

F. **"How the Farm Pays."** Price, $2.50. The valuable new book by Peter Henderson & William Crozier, on the best methods of profitable gardening and farming, as proven by the experience of these successful men. Free by mail for 4 subscriptions at $1.00 each.

G. **Any Books Published in the United States,** to the amount of $5.00 will be sent, by express, for 9 subscriptions at $1.00 each; free by mail for 11 subscriptions.

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N. **$1.00 Worth of Seeds for one Subscription.** To any present subscriber who will send us one new subscription at $1.00, we will give $1.00 worth of seeds of his own choice from the catalogue of any reliable seedsman who advertises in the AMERICAN GARDEN, post paid. For two subscriptions, $2.00 worth and so on

O. **$1.00 Worth of Plants for 1 Subscription.** To any present subscriber who will send us one new subscription, $1.00 worth of Plants or Trees, of his own choice from the catalogue of any reliable nurseryman or florist who advertise in this magazine. For two subscriptions $2.00 and so on.

P. **Four Single Presents for one Subscription.** To any present subscriber who sends one new subscription, any four of the presents offered under List 2. For two new subscriptions, eight of the presents under List 2.

Address all orders to E. H. LIBBY,
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If you want any of the following leading publications for 1885, we will send them in club with AMERICAN GARDEN for the prices named in the last column. This offer is good for both new and old subscribers. *And all club subscribers are also entitled to the seed and plant premiums offered to each subscriber under* **List 2** *on this page.*

A. *Publisher's price for both.*
B. *Our price for both, including seed premiums of The American Garden.*

	A.	B.
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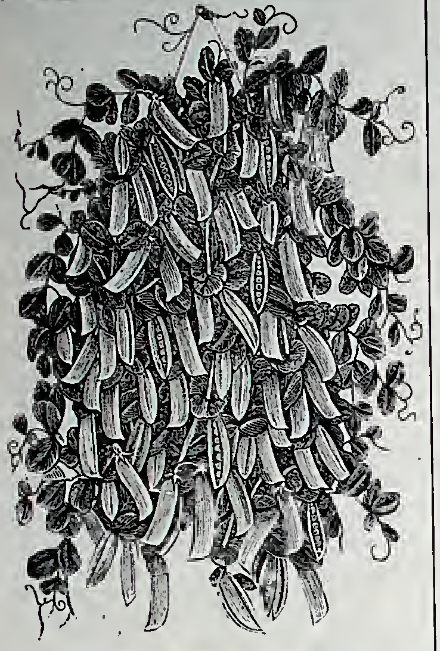

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We will send by mail postage-paid, one quart each of the above three new varieties of peas upon receipt of $2 50 in postage stamps, or money order; and in addition allow each purchaser to select Flower Seeds from our illustrated catalogue to the value of $1.00. This substantial offer is made with the view of introducing ourselves to the readers of this valuable horticultural journal, and at the request of its new manager. As it only stands good until our stocks are sold the necessity for taking early advantage of it is apparent Our catalogue containing "only the best seeds" for farm and garden will be mailed free to all applicants.

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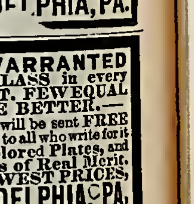

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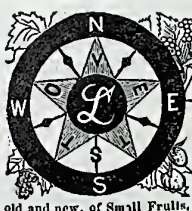

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AGENTS WANTED

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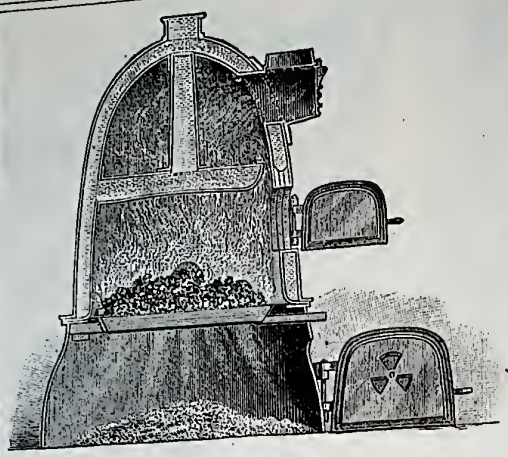

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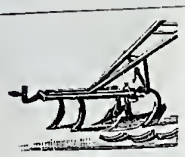

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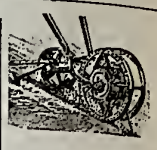

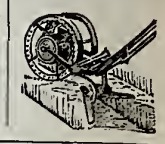

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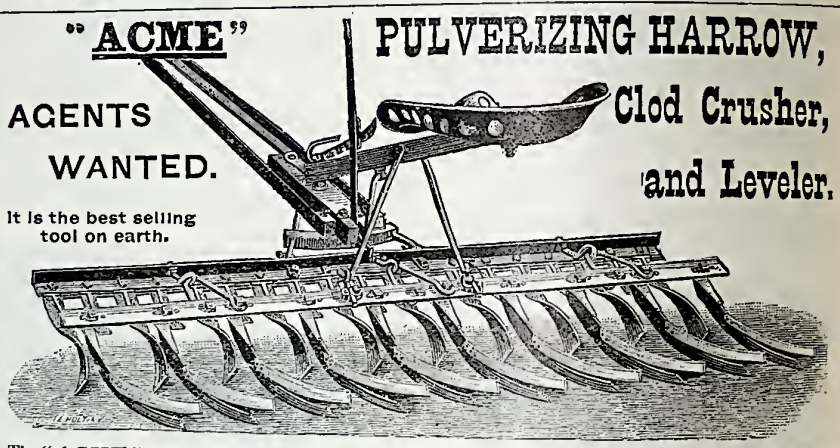

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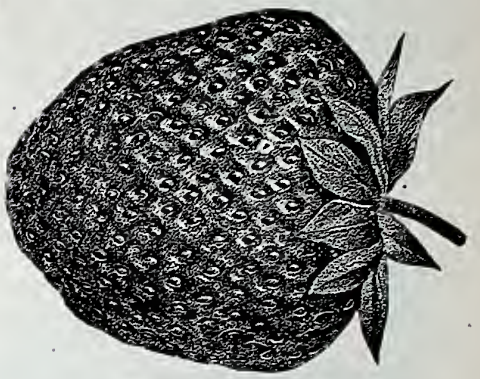

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Report on the Mapes Potato Manure.

528 Bushels of Potatoes on One Acre, One-Half Acre Yields 280 Bushels.

A. One half Acre—"Mammoth Pearl," northern seed, yield 16,829 lbs. equal to 280 bushels.

Piece "A" Ground accurately measured, one-half acre (less 180 square feet.) Soil clay moderately heavy, but better adapted for potatoes than some clay soils containing iron and inclined to bake. The preparation of this acre was thorough and the land at planting very friable and nice. It had received no manure but the Mapes prior to 1881, and had been for many years in grass, neglected until there was only a thin soil full of weeds when it was plowed up in 1881 for corn. It was just such land as I term ordinary common farming upland. Potatoes planted in rows 18 inches apart, 12 to 15 inches apart in the row, covered and levelled flat. Smoothing harrow used until the vines were 2 or 3 inches high, kept clean from weeds up to that time, then a single tooth cultivator was run between the rows full depth, (say 5 inches) and the Mapes Potato Manure, 500 lbs per acre, distributed in the cut or furrow for the purpose of inducing root growth from rows, then a mulch of wheat chaff was spread evenly two inches in depth over the entire surface of the half acre, excepting on one half the length of four rows, this strip was left without any mulch to test the effects of the mulching; no cultivation was given after the mulch was spread.

Fertilizer used, 800 to 900 lbs. of the Mapes Potato Manure spread evenly over the entire surface, after a broadcast dressing of 20 loads of stable manure. The yield was 16,829 lbs. equal to 280 bushels (60 lbs. each) on this piece, one half acre. These measurements were accurately made by disinterested parties. This very large yield is explained by the fact

B. One half acre—"Mammoth pearl," Home raised, seed yield 248 bushels.

That the rows were twice as numerous as usual (18 inches apart instead of 3 feet) and the potatoes (contrary to expectations of some neighbors) instead of being small were very large, unusually so and very superior in quality, rarely excelled The test made on the half of the 4 rows (40 feet long) by omission of the mulching showed no difference in *either quality* or *quantity* of yield. There was no perceptible difference at harvest. If the season had been a dry one the mulching might have proved beneficial.

Piece "B." The conditions of this piece of one half acre, were apparently just the same as with the half "A," including character of soil, fertilizers used, method of planting, excepting that *home raised* seed was planted and no mulch used. Yield was much inferior in quality and size of the potatoes as compared with plot "A." The product was not accurately weighed, but it fell short of the yield of plot A, by twelve to fifteen per cent. but was certainly not less than 248 bushels on the half acre. The potato bugs did considerable damage to this piece and reduced the yield, possibly enough to make up the difference. All of this potato ground had been fertilized for three years before, exclusively with the Mapes Manures. In 1881, 1,000 lbs. for corn. 1882, 800 lbs. of the Mapes Potato Manure for potatoes, in 1883, with 500 lbs. of the Mapes Complete Manures for "Light" and "Heavy" soils, ½ each, for Wheat.

(Signed) W. S. COMBS, FREEHOLD, NEW JERSEY.

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The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

Vol. VI. Old Series, Vol. XIII. MARCH, 1885. No. 3

JAPANESE PERSIMMONS.

To judge from the satisfactory results already obtained from these fruits in our Southern States and as far north as New Jersey even, the time cannot be far distant when they will become an important product of a large portion of our country. In Japan the Persimmon, or Kaki, is the most valuable native fruit, and has been abundantly grown from the earliest period, in all parts of the country except the most southern and most northern provinces.

Through the courtesy of Henry A. Dreer of Philadelphia, we are enabled to lay before our readers the accompanying illustration of forty-two varieties of Japanese Persimmons—reduced to one-sixth of the natural size—published and sent here by the Agricultural Bureau of Japan. The execution of the original plate is remarkably accurate and artistic, and highly creditable to the Japanese artists. From the descriptive notes and cultural directions received at the same time, we quote:

"All these fruits are remarkable for being very harsh and astringent before maturity, but some of them become luscious and highly nutritious when ripe, more especially after exposure to frost; others are difficult to free from the original harshness, and never become luscious, even when quite ripe. The former are eatable in the raw state when ripe and are esteemed as among the most delicious fruits; the latter are made into delicate sweet meats, and dried in various ways.

Amaboshi is made by picking the immature, astringent fruit, and after peeling with a knife, drying on strings.

Karogaki is made by filling a wooden case with well dried fruit made in the above manner, and covering tightly with a lid which produces the appearance of a white saccharine substance on the skin of the fruit.

Tarunuki is made by packing the half ripened astringent fruits in a new *Sake* cask, and then covering tightly with a lid.

Sawashigaki is made by packing the fruits in a tub, pouring on them hot water boiled with straw ashes, and covering them tightly.

Jiukushi is made by wrapping the fruit in straw for a few days.

A valuable liquid is also expressed from the unripe fruit, which is widely used instead of varnish under the name of *Kakishibu* or Persimmon sap. The tree is also prized for the excessive hardness of its wood which when old becomes black as ebony.

In Japan the Kaki has long been subject to improvement by culture and selection of the best varieties which are then propagated by grafting.

The soil most adapted to the growth of the Kaki is a gravelly, clay-loam, in a situation neither too dry nor too wet, and a free open space is necessary. Once a year, in the middle of winter, the plants require manuring, night soil being preferred, which is applied in a furrow dug around each tree. They must be pruned every alternate year in early spring or after harvest in autumn. Pruning consists simply in breaking the branches with the hand, because this tree should not be touched with iron. The Kaki is propagated by grafting only, as seedlings are very slow in bearing, and are inferior. Following are the varieties illustrated:

1, Tsuru-no-ko; 2, Tankiu-dzuru; 3, Yamadzuru; 4, Ko-tsuru; 5, Shimo-maru; 6, Kumosu-maru; 7, Tane-nashi; 8, Tengu; 9, Shibu-tsuno-magari; 10, Tsuuo-magari; 11, Masugata; 12, Hachiya; 13, Shimoshiradzu; 14, Okame; 15, Yemon; 16, Nitari; 17, Hiyakume; 18, Daidai-maru; 19, Goshiogaki; 20, Goshio-hira; 21, Goshio-maru; 22, Nitari; 23, Yedoichi; 24, Zenji-maru; 25, Denji-maru; 26, Denjiu-maru; 27, Kabutogaki; 28, Kou-shin-maru; 29, Toyama; 30, Giboshiu; 31, Miyotan; 32, Higaki Musashi; 33, Higaki Koutsuke; 34, Abura-Tsubo; 35, Hokogaki; 36, Koshibu; 37, Aoso; 38, Gionbou; 39, Saijio-gaki; 40, Kintoki-maru; 41, Hetaguro; 42, Shinano-gaki.

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The Vegetable Garden.

SEASONABLE HINTS.

A good vegetable garden should consist of two distinct parts. The one to be principally devoted to seed beds and the raising of the earliest vegetables, and those requiring most care and attention. This garden-patch proper should be in the best possible condition in every respect, and being worked by manual labor exclusively, need not be very large; it should be in a sheltered position, naturally or artifically well-drained, and receive about as much stable manure to the square rod as the average farmer spreads over an acre.

The other division of the garden is simply a miniature farm or field in which the different crops are planted side by side. All the taller growing vegetables may be easier raised in long, parallel rows sufficiently apart to admit the use of horse cultivators or wheel hoes.

Selection of Varieties. It would be impossible to devise a list of varieties that would be best adapted for all soils and situations. The following varieties, however, we know from extensive practical experience with them, to be reliable and to give satisfaction under ordinarily favorable conditions.

Beans. Early Valentine for earliest; Refugee for late, this is the best for pickling; Large White Kidney for shelling, but it is also good for fresh use; Crystal White Wax for those who do not object to its color. For poles the Large White Lima is best. Extra Early Lima is about a week earlier.

Beets. Egyptian answers all purposes.

Cabbage. Early Wakefield for early, Late Flat Dutch for winter use, and, if you want the best at any time, Improved American Savoy.

Carrots. Early Horn for early, Long Orange for winter use.

Cauliflower. Extra Early Erfurt, Early Snowball for early, Algiers or Nonpariel for late.

Celery. Golden Heart Dwarf, Boston Market.

Corn. Early Marblehead for earliest; Triumph for medium; Stowell's Evergreen is first for late use.

Cucumbers. Improved White Spine for fresh use, Green Prolific for pickling.

Lettuce. Early Curled Simpson, for earliest, Black Seeded Butter for forcing and spring, Salamander and Deacon are choice for summer use.

Melons. Hackensack and Cassaba are as good as any, but many others are just as good. Of Watermelons, the Peerless has succeeded best with us.

Onions. Yellow Danvers, Red Wethersfield.

Parsnips. Student is the mildest.

Peas. There is an endless number of varieties, and most of them are good, but if one manages them properly American Wonder and Champion of England cannot be excelled

Radishes. Earliest Scarlet Erfurt, Olive Shaped.

Spinach. Round Leaved for early, Long Standing for late spring.

Squash. Perfect Gem for summer, Hubbard for winter use.

Tomatoes. Little Gem is the earliest but too small, Livingston's Perfection and May Flower have no superior.

Turnips. Purple Top Strap Leaf, Yellow Aberdeen, American Improved Ruta Baga.

RUST ON CELERY.

In a recent number of the American Garden, it was quoted from a contemporary that by slipping tiles around the stalks, rust in Celery may be avoided. The process of culture described, besides being entirely too slow and troublesome for ordinary practise, can have nothing whatever to do with the preventing of Celery from rusting, as that has been proved beyond all question to be caused by the destruction of what botanists term the "spongioles," or what gardeners call in plainer and more expressive language the "working roots" of the plants. This destruction of the working roots is the result either of excessive moisture or its opposite, long continued dryness. Either cause produces rust or blight in the leaves of Celery in hot weather, and no process of culture will remedy it until the lower temperature of the fall months comes.

In Hudson County, N. J., the past season where probably five hundred acres of Celery, or fifteen million plants are grown annually, the unusual wet weather of August and the early part of September blighted or rusted almost without exception every field of Celery planted, and so it remained until the cooler and dryer weather of October enabled it, in a measure, to outgrow it.

In the season of 1880 we had a similar occurrence of rust or blight in the Celery, from the fact that during about the same period—August and September—hardly a drop of rain fell, but the recuperation from the affection was rather quicker that season, for as a rule the destruction of the working roots of a plant by drying is less severe than when rotted off by water.

Almost every lady who grows a few Geraniums in her window has mourned at times the yellow leaves that come on the plants. These are the "tell-tales." The plants have suffered through excessive drouth or moisture destroying the working roots and they thus dumbly complain of the ill-usage.

Peter Henderson.

BRUSSELS SPROUTS.

During the winter months Brussels Sprouts is one of the most expensive and choicest vegetables to be found in our city markets. While it has always been much esteemed in Europe, in this country it has as yet attracted but little attention. A constantly increasing demand, however, seems to indicate that people are commencing to appreciate the excellent qualities of this desirable vegetable, which indeed should be found in every garden. When properly prepared for the table it is exceedingly delicate in flavor, and by some persons preferred to Cauliflower even.

The plant grows from two to three feet in height producing from the sides of the stalks, at the axils of the leaves, numerous little sprouts or miniature Cabbage heads from one to three inches in diameter; a large but loose head being also produced at the summit of the stalk. When the heads commence to form, the leaves should be broken down in order to give them room to expand. To obtain satisfactory result, and a profitable crop the ground should be heavily manured, and deeply worked; a rather heavy and moist loam is most suitable.

For a late crop the seed should be sown very thinly in a seed bed about the middle of May, giving the young plants a treatment similar to Cabbage. As soon as large enough they should be planted out in rows about two feet apart each way. Keep the plants well and deeply cultivated, hoe often, and when they commence to head, hill them up well with earth.

If it is desirable to obtain an early crop of Brussels Sprouts the seeds should be sown very thinly in a shallow box of light rich soil about the last of March, and the box placed in a gentle hot bed; as soon as the young plants are well up, they have to be gradually hardened off, and planted out about the tenth of May, and treated similarly to early Cabbages, remembering that it is an essential point in the cultivation of this plant to cultivate deeply and thoroughly.

Although Brussels Sprouts are grown extensively as an early crop, their principal value is as a winter vegetable for the heads are wonderfully improved by early frosts. Before severe freezing weather sets in, the plants should be dug up, brought to a cool cellar, and have their roots covered with sand or dry earth. Chas. E. Parnell.

POTATOES IN PITS.

It was stated in a recent number of the American Garden that Potatoes and Apples retained their flavor better when buried in the ground than when kept over winter in a cellar. Although "flavor" in the Potato is not easily defined, the inference drawn is that the writer's observations agree with my own in that Potatoes retain their plumpness and cooking qualities better when stored in pits than in the cellar. That is, generally speaking, as there are cellars with such a favorable location that an even temperature is maintained with but little difficulty and just the right degree of moisture for the successful keeping of fruits and vegetables.

There is one disadvantage, however, in storing Potatoes in pits, and this, I think, often more than counterbalances the benefit, that is provided one has resource to a reasonably good cellar. Potatoes do not retain their plumpness and good cooking qualities long after being removed from the pit which of course is a disadvantage to both seller and consumer, unless the crop is to be sold for immediate consumption.

If disposed of at once the shrinkage is usually less on the pit stored Potatoes than those kept in a cellar. Just what per cent. the shrinkage will be in either case depends on the nature of the soil, time of growth and a variety of other influences that may effect the result. W. H. Rand.

THE MARKET CHAMPION TOMATO.

Earliness, firmness, good shape and large yield are the essentials in the ideal Tomato, and although we have already many excellent kinds there is still none that can be considered perfect. The Market Champion, now introduced by Johnson & Stokes of Philadelphia, and which has carried off the prize over all competitors wherever exhibited, is the latest claimant for superiority. It is of bright glossy pink color, smooth, of uniform size, flesh hard and solid, keeping a long time after ripening. It is a vigorous grower with quite distinct foliage, very productive, and claimed to be the earliest ripening large Tomato in cultivation.

NEW SQUASHES.

There is such an endless diversity of forms and shapes in Squashes, and the construction of the flowers so readily facilitates the crossing by bees and other insects that it is but natural that new varieties should appear almost every year; yet it is surprising that among so great a number of kinds there should be comparatively few really first class varieties. Messrs. W. Atlee Burpee & Co., Philadelphia, are now introducing the new varieties, shown in our illustrations, which are claimed to be equal, if not superior, to any of the older and standard kinds.

New Red China Squash.—The skin of this is of a vivid red color, faintly striped longitudinally with pale yellow. The flesh is rich orange-yellow, firm, fine-grained, sweet and excellent in quality, both for table use and for pies. It matures early, keeps well and is immensely productive.

RED CHINA SQUASH.

New Brazil Sugar Squash.—This is a summer and fall variety. When full grown, the fruit weighs from two to four pounds, measuring six to eight inches in length. The skin is canary-yellow, and warted, the flesh is slightly greenish-yellow. It is said to be enormously productive and to exceed in quality any of the early varieties.

Salem Improved Valparaiso Squash.—Originated in Salem, N. J.; skin rich orange; flesh yellow and fine grained. This grows to very large size, weighing from fifty to over

BRAZIL SUGAR SQUASH.

one hundred pounds each; season late, and the originator claims for it several times as much weight per acre as the Hubbard.

EXPERIENCES WITH TOMATOES.

It would be interesting to know what particular character of the Tomato suggested the name "Love Apple," by which it is known in at least three languages, doubtless many readers of the AMERICAN GARDEN can remember when under this name our mothers grew this fruit for ornament, and we were told never to touch it as it was poisonous. We should certainly be grateful to some unknown adventurer for dispelling this delusion by what must have seemed foolhardy experiments. Now we should find it difficult to substitute the peculiar refreshing flavor of this fruit, and a garden without Tomatoes seems to lack one of its most important features.

The culture of the Tomato is so simple as to scarcely need reiteration, the most approved writers on kitchen gardening urge more or less strongly the importance of starting the plants with artificial heat, of training back the leading shoots to promote earliness, etc. Were these admonitions given because those authors had proved by experiment that they are necessary, or were the authors guided by reason alone, into assuming that in the nature of the case that *must* be the best way to raise Tomatoes?

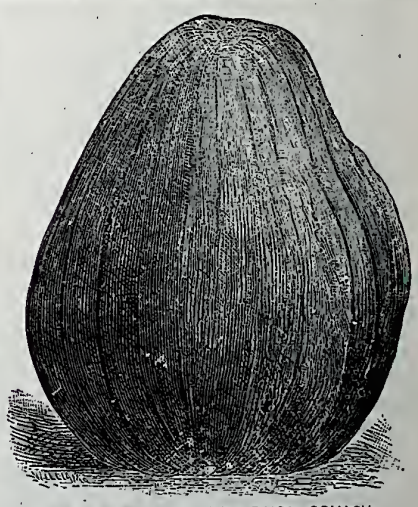
Listen to the result of some experiments. Last spring I had it in mind to find out how much we gain by starting Tomato plants in the hot-bed. Accordingly, I planted a quantity of seed of the Livingston's Favorite variety in the latter part of March, in boxes, and placed the latter in a hot-bed where the temperature ranged from 70 to 80 degrees. The plants came up promptly, and grew rapidly, and many who saw them inquired if I should have any to spare. On the 24th of April, twenty-eight days after this planting, I planted some more seeds from the same package, in hills in the garden, just as we plant Sweet Corn, except that I covered them less deeply. These seeds vegetated after nineteen days and for a time, of course, bore little comparison to their hot-bed rivals. In due time the latter after being first carefully hardened off were transplanted to a plat near to the planted hills and I awaited the result of the competition, with interest. The hot-bed plants turned pale, and, as if weary of standing erect, bent their stems to rest their heads upon the ground. The others were of the deepest green, with chubby stems, and with leaves reaching as far as the plants were tall.

Now for the result, the hot-bed plants ripened their first fruit August 19th, and the others ripened theirs August 21st, only two days later. From this time forward, the plants grown in the open ground showed no inferiority, either in the quantity or quality of the fruit. Here is an interesting question, the seed of the hot-bed plants was sown March 27, twenty-eight days before that sown in the open ground; and while the soil of the garden was yet frozen, the young plants in the hot-bed were enjoying the conditions of a tropical summer. Was the careful made transplanting so detrimental, or did the artificial heat weaken their vitality?

Some one is doubtless asking "would you advise this open air method of growing the Tomato?" I should not depend wholly upon planting in the open ground, until I have had more experience with this manner of culture. In regions visited with late spring frosts, it might at times be necessary to protect the young plants from seed sown in the open ground; and yet I have never seen Tomato plants that came up from self-sown seed, injured by frost in spring. Possibly those who grow Tomatoes for canning purposes, might plant their seeds in the open ground with a saving of expense.

I have also made a comparative trial between plants trained upon a trellis, and those allowed to grow upon the ground; also between plants pinched back, and those unpinched. The results showed no gain in earliness either from the training or pinching. I should add, however, that the Tomato is one of our most capricious plants, and the results of the test may, or may not be confirmed by another. It is too early to pronounce the question settled.

Last season, seeds saved from a very green fruit produced plants that ripened Tomatoes several days earlier than plants of the same variety grown from mature seeds. The plants from the green seeds were however perceptibly feebler in growth than those from the ripe seeds. The seeds from fruits gathered before fully grown and ripened by exposure to the sun, germinated well, and



SALEM IMPROVED VALPARAISO SQUASH.

produced apparently healthy plants. Seeds gathered from the first fruits to ripen produced plants that matured their first fruits slightly earlier that those from seeds from the latest fruits.

This seems to be an invariable rule in other fruits also, that seeds from unripe fruits tend to promote earliness in the ratio of their immaturity.

A very noticeable feature in a test of many varieties of the Tomato, was that the sorts that were earliest in 1883, were not so in 1884. Indeed there seemed to be little uniformity in the order of ripening of varieties in the two tests.

"ELM."

EARLY ARLINGTON CELERY.

Celery is one of the few vegetables with which the South cannot help us to extend the season. While Florida and the Carolinas furnish us fresh Peas and new Potatoes long before our ice-bound soil becomes fit to receive the seed, Celery refuses to adapt itself to warmer climates, and earliness therefore can be gained only by growing early varieties.

Our illustration represents a new variety of Celery, originated with Mr. John Wyman, and now introduced by Mr. W. W. Rawson of Boston, for which is claimed not only extreme earliness, but also freedom from blight under conditions when other early varieties fail; it also blanches readily, two banking being sufficient for the purpose. Market gardeners in the vicinity of Boston consider this variety a decided improvement, and having received so high an endorsement as the award of the first prize of both the regular and special premiums offered by the Massachusetts Horticultural Society, at its last autumn exhibition, there can be no doubt about its being a valuable variety worthy of trial by market gardeners as well as amateurs.

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EARLY ARLINGTON CELERY.

COMPLETE FERTILIZERS.

Among the most harmful and most deeply rooted prejudices under which farmers labor is that against commercial fertilizers, resulting largely from the fact that in former years large quantities of fraudulent articles were sold to them unawares. But thanks to the fertilizer laws, this state of affairs exists no longer, so that in purchasing commercial fertilizers one may know exactly what he gets, as much so—and more accurately even—as in buying hay or grain.

To determine which special kind of fertilizer will give the most favorable results in a given case however is not generally so easy a matter. A fertilizer—yard manure included—may under certain conditions produce satisfactory returns, and yet there may have been considerable waste in its use by having contained elements which the land did not need. Nevertheless there is danger of impoverishing the land in applying only a single plant-food element, as all the other elements required by the crop have to be taken up from the resources of the soil. This indirect action of a fertilizer performs a far more important part in fertilization than is generally supposed.

Mr. Charles V. Mapes, who has devoted a life time of careful study and extensive practical observation to the subject of plant fertilizers, in treating of this point, says in a recently published pamphlet on Potatoes:

"Any soluble salt or fertilizer, like nitrate of soda, sulphate of ammonia, potash salts, kainit, acid phosphates, plain superphosphates, etc., when incorporated with the soil, acts as a *solvent on* all the *plant-food in the soil, and indirectly* supplies the crop, to the extent of the resources of the land, with all the remaining elements of plant-food which the fertilizer applied fails to contain. It *exhausts* the soil of everything except those elements which it supplies from its *own resources*. While the result for a season or two, from such a partial fertilizer, particularly on a strong soil, may be apparently satisfactory, yet, all the time, the soil is being exhausted. There is only a limited amount of plant-food in the soil in condition to yield to the solvent action even of such soluble salts as above-named. If the process could be kept up indefinitely it would be very different. To restore the land when it has been made "sick," or exhausted, by stimulating fertilizers is one of the hardest and most expensive processes in farming.

"A complete manure, a manure complete in a practical sense, one supplying all the leading plant-food elements in full proportions necessary to meet the requirements of the crop on average soils and in the best and varied forms—as found in stable manure—*can never exhaust the soil*, but on the contrary, with the exception of some waste of unused nitrogen, all the plant-food ingredients, notably phosphoric acid and potash, will last thirty years and more; will, in fact, last indefinitely until used up by future crops."

SPORTING BEANS.

A few years ago I undertook to raise garden vegetables for a pretty large family and to supply a somewhat limited neighborhood market. As a matter of course, I thought I must raise some Horticultural or Speckled Cranberry Beans, but they did miserably in my muck and clay garden. They seemed to have no aspirations for a higher life, would not take to the poles, and produced but few pods. But there was among them one notable exception, which produced a strong vine that ran to the top of the pole and had plenty of pods well filled. When ripe it differed from the orthodox Speckled Cranberry Bean in that it was flatter, longer and more angular, though the color and specks were much the same as in the original. I thought I had found a treasure and the year following planted every seed of them. Imagine my surprise when I came to harvest the crop. There were early and late Beans—some so late they did not ripen—Bush Beans and Pole Beans, long and round Beans, white and red Beans, streaked speckled, flat, square and in short almost any variety of Beans that one might imagine except prolific Beans. It appeared as if, having once fairly broken loose from the steady unchanging ways of their ancestors, they had found so much sport in it, that they could not readily leave off changing. So they went on assuming different appearances until there were as many as are to be found in the costumes of a fancy dress ball.

To say the truth I enjoyed the sport and although it was not very profitable could not forbear planting again last spring. There was a smaller number of sports this year and the progeny seemed inclined to assume the shape and appearance of some half dozen distinct strains, but as there were no very good bearers among them I concluded to discard all except a few varieties, which I retained for future trial.

H. J. Seymour.

FRESH SPROUTS.

More seeds fail to come up from being planted too deep than from all other causes combined.

Prof. G. C. Caldwell thinks there is little danger of getting poorer Potatoes in the larger crop with ashes as a fertilizer.

Growing Lima Beans on stout brush, six to eight feet in height, is preferred to poles by many who have tried both ways.

Have everything in readiness for spring work, but never attempt to work the soil before it is ready for it, that is before it is dry.

For hot-beds made after the fifteenth of March, Peter Henderson considers sashes covered with oiled muslin preferable to glass.

Vegetables as a rule will thrive best, other things being equal, on a naturally drained, deep, sandy loam with southerly exposure.

Rhubarb and Asparagus may be forced readily by digging up the roots with a good sized clump of soil, and placing them in a hot-bed.

Coal ashes are too valuable to be dumped in the road. On many soils a load of sifted coal ashes is as valuable as a load of stable manure.

At this season, vegetables in cellars are more subject to decay than at any other, and should therefore be looked over frequently, removing all decaying matter.

To keep Sweet Potatoes in good condition they must be stored in a dry and well ventilated place with a temperature never lower than 40° and never higher than 60°.

The Fruit Garden.

SEASONABLE HINTS.

Alternate thawings and freezings of the ground prove more disastrous to small fruit plants, Strawberries especially, at this season than at any other. When the ground thaws very suddenly, it is not a rare occurrence that plants that have not been mulched are completely thrown out of the soil. To prevent this they should receive a thin coat of littery stable manure while the ground is still frozen. This protects the plants and provides fertility for a good crop.

Strawberries.—In this latitude, there is rarely anything gained by planting, if such is at all possible, before another month; but those contemplating to plant new beds, should decide now upon the varieties to be selected and the nurseryman of whom to order, and not wait till planting time.

Quality of Plants.—Many beginners in fruit culture, and some who might know better, too, seem to be entirely ignorant of the great difference between plants of the same variety. While they are perfectly aware of the material differences in quality and prices of the various grades of groceries, dry goods, hardware and every kind of merchandise, plants seem plants to them, and they select their supply from the source where it may be obtained the cheapest, irrespective of quality. And yet so great is the difference in intrinsic value between plants of the same variety, that while first class plants may be cheap at two dollars a hundred, others may be dear at a dollar a thousand, in fact they may be dear as a gift if the recipient were obliged to plant them.

Young and Old Plants.—Good plants are not grown as a second or auxiliary crop. In all first class nurseries, plants are considered of sufficient importance to be grown as a main and exclusive crop, no berries being allowed to form on plants used for propagation. And unless such a course is pursued it is impossible to produce plants of uniform first quality. Old plants will unavoidably become intermixed with the young, and while under favorable conditions old plants may live, no one would knowingly accept them in place of young ones any sooner than he would a stale loaf of bread for a fresh one. The accompanying illustrations, show the difference between the two kinds. The roots of the young plants are succulent, soft, and of uniform color and appearance, while with old plants the main roots are black, wiry and dry, if not entirely dead. A large number of poor, weak plants can never compensate for even one healthy, vigorous growing plant.

Raspberries are among the earliest starting plants and should therefore be planted at the very first opportunity after the ground becomes fit to be worked. Order your plants now so as to have them on hand when wanted and if they should arrive before the soil or yourself are ready, heel them in a dry, sheltered spot, or in a cool cellar if the ground is frozen; they will only be in the better condition for this treatment.

Don't plant Raspberries deeper than they stood in the ground before, and cut off all canes to within three or four inches from the surface. The same directions apply also to Blackberries.

GRAPE TRELLISES.

The person who plants a few vines to provide Grapes for only home consumption need not trouble himself much about trellises, for he will find that convenient fencing and outbuildings will afford all the supports required; but to the vineyardist trellises are matters of considerable expense and the cheapest and best way to construct them is to him a matter of importance. Fortunately the trellis need not be tasteful, for the vines will cover it and hide all roughness

YOUNG STRAWBERRY PLANT.

and ugliness from view. Hence cheapness with durability only are to be sought.

The construction of the trellis should depend somewhat upon the character of the vine to be supported by it. If the vines are so hardy that they will not require laying down in winter, the trellis should be substantially built, the supports being well seasoned posts of durable wood set deep in the ground, for to replace the trellis will be a difficult matter and can be accomplished

OLD STRAWBERRY PLANT.

only by seriously disturbing the vines. But if the vines will need laying down each winter, the trellis need not be so substantial, stakes driven in the ground will serve for supports and the strips may be made of any cheap, convenient material.

It is certainly an unwise proceeding to make the rows of a vineyard, and therefore the trellises, run east and west. When so made the Grapes on the northern side will be slow to ripen and if the variety is late may not ripen at all. By making the trellises north and south each side will have a supply of sunlight and the ripening will be more uniform and nearly perfect. Another fault is to make the trellises too close together. Unless land is very high-priced, the trellises should be ten feet apart. This will give room for the passage of a wagon between the rows, the vines will be all the more vigorous for the greater breadth of land to feed from, and air and sunlight can pass freely about the vines and fruit.

A substantial trellis is made by setting seasoned Locust or young White Oak posts ten feet apart, and reaching four feet above the ground. On the top, and one foot and two feet from the top, nail strips of board, or where timber is abundant, light poles split in halves. It does not require a skilled mechanic to construct such a trellis, the materials are cheap, and it will serve its purpose for fifteen to twenty years. In place of the posts, stout stakes driven firmly into the ground may be used where a structure of a rather temporary nature will answer. If the strips are made of boards, I would say to use Pine. This is light and strong enough to support all the weight it will be called upon to bear, is easily nailed and when close-grained and free from knots and "wind shakes," lasts as well as any hard wood.

Lately I have noticed considerable wire used in place of lumber strips and it appears to answer the purpose well. Galvanized wire alone should be used, as the dampness of the situation will soon rust out wires not protected from moisture. Painted wire has been used, but from my experience with it in fencing, I would not recommend it for trellises. When wire is used the posts may be placed at least twenty feet apart, the end posts being firmly braced, as in the construction of wire fences. The wire used is the smooth wire used for fencing. Of course barbs are worse than useless. The wire must be tightly stretched, as in the construction of fencing, else the weight of the vines will sag it down between the posts. As it reduces the number of posts, costs less than wooden strips, and lasts fully as long, I believe wire is better than wooden strips and shall use it when I next build trellises.

A leaning trellis for double rows has lately been tried and gives the highest satisfaction. Posts four feet long are leaned together at the top, the bottoms being placed on the surface of the ground three feet apart. The tops of the posts are so sawed that they are horizontal when placed in position and a board is nailed along the top to serve the double purpose of holding the posts together and supporting the vines; or also the posts are held together by strips nailed to their sides and a wire is stretched along the top. The bases are held in place by being attached to small stakes driven into the ground. These stakes need not be large, as the weight of the vines will soon hold the trellis in position. Two strips or two strands of wire pass along each side. A row of vines is planted along each side. This trellis saves the labor of setting posts, and posts only four feet long are required, and only five strips or strands where six would be used on single trellises. If the vines require winter covering they need not be taken down but corn fodder can be leaned against them, or straw or other litter be placed over them and held in position by light poles.

JOHN M. STAHL.

A PEACH-TREE ENEMY.

The Elm-bark Beetle, *Phlœotribus liminaris* which formerly confined its devastations to the Elm principally, to-day attacks also fruit trees, especially Peaches and Cherries, and causes considerably more injury than is generally supposed. I noticed lately a small Peach orchard, every tree of which was infested, and the stems thickly covered with gum, while the previous year all were healthy and bore a crop of fine fruit. It has been stated that these insects attack only sickly and dying trees, but I have positive proof that this is a mistake, as they have killed three-years-old Cherries, Plums and Peaches that presented a most luxuriant growth and healthy general appearance.

The full grown insect, a minute cylindrical beetle about one-tenth of an inch long and one-thirteenth of an inch in diameter, issues from the bark the latter part of August through holes so small as to be nearly imperceptible, over which the cuticle closes after the insect's exit. The beetles continue to appear on the surface until freezing weather. In about four days after their appearance, they bore a hole back through the bark, the full size of the perfect insect. All the material they thus remove passes through them, their castings being merely the borings, yet it is not for the purpose of obtaining food that they gnaw these apertures, but to provide a place in which to deposit their eggs, and also to furnish a receptacle for their dead bodies.

After the female insect has deposited her eggs in the bottom of this hole, into which she fits so snugly that it is difficult to extract their bodies, she dies, forming a perfect shield for the eggs. As no traces whatever of the dead insects are discoverable the following season, I am led to the conclusion that their bodies serve as the first food for the young larvæ.

On the approach of warm weather the following spring, the eggs hatch; the larvæ begin to feed on the alburnum, and radiate in jogged lines in all directions from their breeding place for about an inch in circumference. They are so numerous under the bark that they undermine it completely. But the insects and the holes in the bark are so small as to escape attention until the mischief is done and the tree dies, yet the jets of gum on the surface are plainly visible and cannot escape the attention of the observer.

As a remedy, carbolic soap and diluted potash, used alternately, have given satisfactory results. They should be applied to the trees in April, and again in August and September. A. J. Caywood.

A VINEYARD IN THE CALIFORNIA WILDERNESS

A year ago this winter I cleared and set out to vineyard sixty acres from the midst of the grand, forest-covered top of Howell Mountain, ten miles north-east of St. Helena, Cal. St. Helena is the center of the Napa Valley vineyard region—one of the principal regions of the state. The valley is narrow here and given over entirely to the Grape; in early summer, as one rides through it on the railroad, the scene is something like Paradise.

The price of land in this Paradise is $1,000 an acre; which explains sufficiently why my sixty acres were located not in the valley but on Howell Mountain, 2,000 feet above it where land may be had at $30 an acre, and where it will cost about $30 more to clear it. I began clearing in December and found it stupendous work, even with a large gang of Italians. The land lay in a beautiful, rounded slope on the south side of a vast, easy-rising hill; the forest was a forest of giants. We cut the Oaks into stove-wood—some four hundred cords; the great Yellow Pines, four and five feet through, after cutting in lengths, we tried without success to burn and ended by hauling them off below the vineyard, where they lay like the pillars of a fallen temple. Stumps were summarily dealt with by means of dynamite cartridges.

Immediately after getting the land clear I put two four-horse road-plows on it and turned the deep virgin soil—a light, reddish loam of excellent quality. Deep plowing and deep planting were requisite in view of the dry mountain summers. Thus the last of March brought us to planting.

In mountain vineyards it is deemed preferable to set out rooted vines—cuttings that have grown a year, and to make the holes, not with a crow-bar, as they do in our valley vineyards, but with a spade. I used canes eighteen inches long and planted them their full length in the ground, after having trimmed the roots back to one and two inches. This seems close pruning, but it stimulates a fresh and vigorous root growth.

The vineyard is laid out after the common Californian plan, in blocks of thirty rows one way and thirty-three another, making nearly 1000 vines in a block. The rows are seven feet apart and fourteen foot avenues are made between the blocks, by omitting one row. At each vine is driven a solid three-foot stake for training; my stakes were dipped one-half length in hot coal-tar to promote durability. The Californian vine-grower dispenses with trellises; his vines by constant pruning back are formed into a stocky stump, about two feet high, which is self-supporting.

After planting, one portion of my forces were turned to cultivating with single horse-plows, a work which requires persistent attention, owing to the rank growth of weeds and especially of Ferns. With the remaining portion I began my rabbit-proof fence built like a picket-fence with stakes set very close around the entire vineyard. This labor is unavoidable for the woods abound in jack-rabbits which have an eye single to vineyards, and will kill hundreds of young vines in a night.

Of varieties my stock comprises chiefly the Zinfindel (the standby of our wine-makers,) Riessling, Chasselas, Black Pino, Malvoisie, Mission, Savignon Vert, Muscatel and Sultana, mostly European stocks it will be seen, unknown to the eastern vineyardist. Though an ordinary summer, the growth of the vines has been excellent; and I am already seeking a cool place for a wine-cellar in view of the first vintage to come in five years.

There are as many as a dozen vineyard clearings on the mountain, which has an extensive undulating top many miles square. Our enterprise has every promise of success. We have to plant carefully; we have to light an occasional frost with smoke. But now that the valleys are crowded, vine culture will certainly extend more and more into the low mountains of the coast range, which is so very well suited for the purpose in every way.

Xenos Clark.

HYBRID RASPBERRIES.

It seems strange that there should still be fruit-growers who doubt that the different species of Raspberries can be changed and improved by hybridization. Having been a practical experimenter for thirty years, the results of some of my experiments in this direction leave no doubt in my mind, and will furnish convincing proof to any one who will take the trouble to investigate them.

In the year 1843 I planted in my garden what we then called the wild White-cap Raspberry, that bore hard yellow fruit, of very poor flavor. In the summer of 1845 before the flowers opened I cut out the stamens of several of these flowers and removed all the other flowers from the bush. At the proper time I applied pollen of Franconia to the pistil of these flowers that had previously been deprived of their own pollen. Most of the plants raised from the seed of the berries thus produced strongly resembled the mother both in plant and fruit; rooting from the tips of the young canes, and never throwing up suckers. But two or three of these seedlings bore long, soft red berries, threw up abundance of suckers, and could not be induced to root from the tips. Now I ask the unbelievers in these matters, Were these two or three *red seedlings* hybrids, or not?

If there should still be any doubters, let me inform them of what I did with these two red varieties above alluded to, and which I have always called Hybrids. Believing that their natural characters had been in a measure broken, and that I could again cross their flowers, and by so doing I could in time combine all the good qualities of Raspberries in one or two varieties. The following summer when they came into flower I fertilized them with pollen from our best varieties, amongst others, White Marvel of Four Seasons. The results of this cross were some red, some white, and some dark orange varieties, and very much improved in fruit, but not one rooting from their tips like their grandmother. From this generation of seedlings the three most promising were saved, one light-yellow, one orange, one red.

But believing the acme of perfection had not yet reached, another attempt was made. This time the pollen of Belle de Fontenay, Hornet, and Brinckle's Orange, were used upon the pistil of the yellow seedling. The result from the seed of these being a great many distinct varieties, four of them being very promising. One is considered an improvement on Belle de Fontenay, others resemble Hornet, but are more hardy, and another large delicious yellow is now called Diadem. This last named has the peculiarity of sometimes sending up canes that produce red fruit, and some that produce yellow fruit, from the same roots. If I were not prepared to prove this statement by some of the most intelligent and prominent horticulturists in Ontario, I would not have dared to make it. This is the only instance of this kind I have ever heard of, and in my opinion constitutes proof positive of its hybrid character, and showing at the same time a strong tendency to return to the original type. Charles Arnold.

[The above was written for The American Garden by the late Charles Arnold of Paris, Ontario, shortly before his death, and not only shows how carefully and systematically its author conducted his experiments, but also furnishes an important contribution to pomological science.—Ed.]

THE POUGHKEEPSIE RED GRAPE.

This new Grape, represented in our illustration, was originated by A. J. Caywood, Marlboro, N. Y. We have frequently noticed it at exhibitions, and with each succeeding year we became more favorably impressed of its excellent quality.

In general appearance it resembles the Delaware, being slightly darker, and berries and bushes generally a little larger. It is the sweetest native Grape we know of, free from all trace of foxiness, and even the skins may be chewed without leaving an unpleasant taste. As a table Grape it will be highly prized wherever known, and for wine making it possesses the most desirable qualifications in a very high degree.

It is said to be a cross between Iona and Delaware, wood and foliage resembling the latter; but on the originator's grounds, where we saw it growing, it made more vigorous growth, and was apparently hardier than Delaware. If this new variety succeeds over a large area as well as it does here, it will become a most valuable addition to our list of first-class hardy Grapes.

THE POUGHKEEPSIE RED GRAPE.

WINTER KILLING OF FRUIT TREES.

Prof. T. J. Burrill stated before the Illinois Horticultural Society his belief that the injury to trees which shows itself in patches of dead bark, partly loose sometimes, and in other cases adhering firmly to the stems, results from two causes.

When the bark dies and adheres closely, whether or not a new growth may start underneath, the disease is blight, caused by bacteria. The damage does not occur especially in winter, but the progress of the disease is so slow and obscure that it is rarely apparent until much damage is done, the injury being shown more in the spring than at other seasons. On this account it is usually supposed to be caused by the cold of winter. This form of injury is most common on the south-west side of the trunk, and is therefore often called "sun scald," but it is not due to scald, caused by the sun's heat, as ordinarily understood. The reason that the injury is greater on this side is probably because the bark is cracked more and the bacteria can more easily enter. These organisms can work through living cells, but cannot through the corky bark enveloping tree trunks, unless it is cracked. Insect borers, too, are more apt to infest rough bark and thus other places of access for the minute causers of the disease are opened. The sun causes this roughness and cracking by the evaporation of moisture, rendering the bark brittle and unable to resist, without rupture, the swelling caused by growth.

Although bacteria are doubtless the cause of a part of our injured orchards, the blame does not rest wholly with them. The other destructive agency is frost, causing the actual bursting of the bark or wood by the formation of ice in the tissues of the trunk, and the Professor is confident that the so-called windshakes of trees is really caused by freezing in a majority of cases. When the splitting occurs in layers around the interior portions it is caused by the actual formation of ice. When the crack opens radially, or from the outside directly in towards the centre, it is due to the shrinkage of the wood tissues itself and may occur without real ice formation. Such cracks sometimes open in very cold weather wide enough for a finger to be thrust in, and close again, lightly in the warm weather of spring.

If the above is correct, says Professor Burrill in conclusion, soils and locations are best which suffer least by summer drouths, and are least affected by autumnal rains. It is not the soil that holds the most water as a reservoir, but the soil that holds it longest as a sponge. Those methods of cultivation and management are best which beneficially modify the effects of drouth in midsummer, and at the same time save the trees from too much water at other times. A bare soil becomes dryer in summer than when covered with mulch or green herbage. A hard compact soil gives up its moisture sooner than one well pulverized with the plow and harrow; an undrained soil suffers more than one where stagnant water never accumulates.

SHORT CUTTINGS.

Charles Downing considered the Bartlett the best Pear for summer, Bosc for fall, and Dana's Hovey for winter use.

The Crescent is, by the Colorado Horticultural Society, considered the best early Strawberry for that State.

The free use of fertilizers is in many cases of more importance to success in fruit culture than the character of the land.

The entire Cranberry crop of last year, in all sections of the Union, is estimated at 271,500 bushels, being 121,000 bushels less than in the previous year.

Judge Wm. Parry has observed that the fruits of Bartlett Pear trees planted near Kieffers attained larger size and remained on the trees a month longer than when planted at a distance unfavorable for this natural cross-fertilization.

A barrel of frozen Apples, says the Germantown Telegraph, can be made all right and better than before, by removing half a bushel, filling up the space thus left with snow pressed down and rounded up, and setting in a moderately warm room for a day or two.

For northern localities with short seasons, T. S. Hubbard recommends the following varieties of Grapes: Early Victor, Lady, Moore's Early, Talman, Worden, Dracut Amber; and for the South, Triumph, Herbemont, Perkins, Goethe, Norton and Niagara.

The Flower Garden.

ROBIN IN THE SNOW.

Robin, singing in the snow,
Where the March winds wildly blow,
Peering through the blinding storm,
I can see thy tiny form,
On the paling's sharpened height,
Quiver with the song's delight.
Clouds above and death below,
Yet thou singest in the snow!

Not a twig on any tree
Holds a nesting-place for thee;
Not an inch of forage-ground
Bare in all the country round.
On the unswept window sill
Scattered crumbs have been thy fill.
Scanty provender, 'tis true,
For a hungry wight like you,
Minstrel, wand-ring to and fro,
For thy dinner in the snow.

Trill and twitter in the gloom,
"Sunshine bringeth leaf and bloom;
Soon on yonder snow-clad tree
Mate and nest and warmth for thee,
One whose care is over all—
I have heard His Easter call;
Trust him, though the storm may blow,"
Sings the robin in the snow.

Oft the story has been told,
In the legend sweet and old,
That thy bosom's stain of red
Trickled from the thorn-crowned Head;
Watching in the twilight gray,
Ere the stone was rolled away,
Perched the sepulchre a-near,
Rose thy song of faith and cheer.
I can well believe it so,
Robin singing in the snow.

—*The Continent.*

SEASONABLE HINTS.

Cultivating too much land is one of the most frequent causes of failure on the farm as well as in the garden. Before deciding upon the size and extent of your flower beds it is therefore well to consider how much you feel sure to be able to take good care of. You can sow and plant an acre sometimes in less time than it requires to take good care of a few rods of ground.

A single flower bed kept in scrupulous order and neatness, a single plant even, if well grown and cared for, affords frequently more pleasure, and imparts more air of refinement to a place than a whole yard full of disorderly plants scrambling with weeds.—To avoid disappointment don't undertake too much!

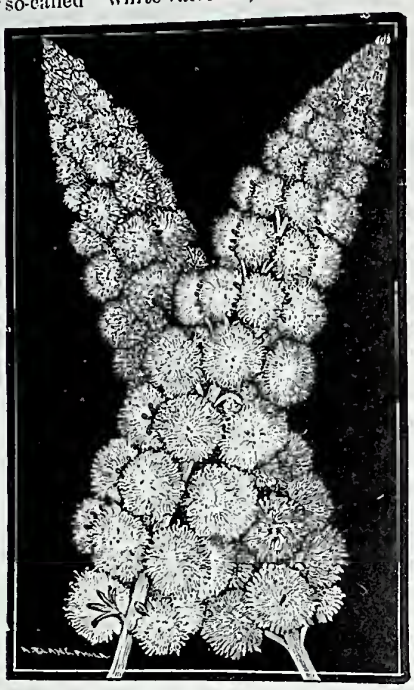
Uncovering Roses and other protected plants should in this latitude be deferred till another month. When the blue birds and robbins return, and a few warm days in the latter part of March make us imagine that spring had come in earnest, we know it is very tempting to relieve our garden pets of their winter clothing, but it is just then that they need it most, to protect them against the frequent changes of freezing and thawing.

Perennials, as stated in another column should be transplanted every few years. The best season for this operation is early spring, although most hardy herbaceous plants that have completed their growth by September may be transplanted with comparative safety in fall, except in the case of bulbous and tuberous rooted plants.

THE SNOWBALL MIGNONETTE.

For many centuries the Mignonette has been held as the "little darling" of flower gardens the world over, on account of its exquisite fragrance irrespective of the unattractiveness of its modest flowers. Of late, however, many varieties have been produced which vary greatly from the original type, in size of flowers and spikes as well as in colors. Yet with the increasing size of flowers there occurred generally a corresponding decrease in fragrance; to produce a large flowered fragrant Mignonette has therefore long been the aim of florists. With this view Mr. George Knoll of Pennsylvania has made extensive experiments which seem now to have been crowned with success in producing the "Snowball" Mignonette, shown in our illustration.

This seedling came from seed gathered from a mixed bed of Parson's White, White Spiral, and Ameliorata. Unlike many of the "so-called" white varieties, which are really



THE SNOWBALL MIGNONETTE.

only dull gray, this is claimed to be pure white, very full and double, and possessed of the true Mignonette fragrance. The habit of the plant is compact, pyramidal and floriferous, the spikes being carried well above the foliage. It is equally adapted for growing in pots as for out-door culture and plants exhibited at the Pennsylvania Horticultural Society elicited high praise.

PREPARATION FOR EARLY FLOWERS.

As the sun returns to the northern climes the true lover of flowers delights to make preparations for an early display of flowers, and to read the catalogues carefully so as to select the plants and seeds which will make the best display in the *parterres*.

If possible, a small hot-bed should be made, in which annuals, Dahlias, Gladiolus, Tuberoses, etc., etc., can be planted as soon as the snow and hoar frosts have ceased to rule. If only a three feet square of glass is attainable a goodly collection of plants can be raised which may be transplanted early in May, and by June they will fully repay all the care, labor and expense you have given them, in their beauty and fragrance.

Select the sunniest spot in your garden, and if it can have the protection of a wall or a fence against the north wind, it will be of great advantage to the growth of the plants. If you cannot obtain a wooden frame made for the purpose by a carpenter, a dry goods box may be made to do duty for it, or even a starch or soap box can be used. Horse manure is the best material to supply the requisite heat, but any kind of stable manure will do, if it is smoking and not burnt. Make a bed of it a foot in height, and tread it down firmly, or pound it tightly in place, as pressure will increase the fermenting power of the manure. Make the bed nearly a foot longer than is required for the frame work, so as to keep out the cold air. Place the box upon it, and press it down several inches into the manure, scraping it out at the sides if needful to put in the frame and then banking it up all around the box.

For sowing the seeds of tender annuals, I find that cigar boxes or any small sized boxes with a little sprinkling of well decayed manure at the bottom, and then filled up with a light sandy soil give better results than when the seeds are sown in the bed itself. Over the tiny seeds of Petunias, Pansies, Verbenas, Stocks, etc., a slight sprinkling of sand should be sifted through the fingers and pressed down upon them, as planted firmly they will sprout better. The names of the seeds may be marked on the edges of the little boxes in pencil, or else, written on slips of paper and put into small sticks which are thrust into the corners of the boxes. Four or more kinds of seeds can be planted in one box.

After they are prepared—they may be planted on the kitchen table, if you are mistress of your own kitchen—place them in the hot bed, by digging out the heating manure, and putting the boxes in compactly, with a layer of manure against all sides of each box. This will give not only bottom heat, but also side heat, but great care must be taken not to let the plants whither or burn them up by too great a degree of heat, which must be regulated by lifting the sashes a little, whenever the sun shines brightly.

When the weather is cold the frames must not be lifted at all, or very slightly if the sun falls warmly upon them. But when the air is soft, the sashes should be half taken off. Warm mats or pieces of carpeting must be placed over them every night while there is any danger of frost. If the seedlings do not have sufficient air, they will grow spindling, and will not make strong plants for bedding-out purposes.

Among the early annuals best suited for forcing are Ageratum, Asters of many colors and kinds, Balsams, *Convolvulus aureus superbus*, Gypsophilla, Salpiglossis (a beautiful flower) Scabiosa in many colors, German Dwarf Stocks Tropæolums in all colors, Australian Daisy—*Viscaria elegans picta*, Zinnias in all shades, Verbenas, Pansies and Petunias in latest varieties.

For forcing Dahlias, Gladiolus, Tuberoses and Tigridias, place four inches or more of sandy soil over the compost, and plant the bulbs in it, and by the time the garden beds are prepared the bulbs will have made a good start and be ready to flower at least a month earlier for your kindly attentions. Cultivate your plants with daily care, and you will raise

"Bright gems of earth in which per chance, we see,
What Eden was—what Paradise may be."

DAISY EYEBRIGHT.

THE SHOWY ORCHIS.

Orchis Spectabilis.

To most persons the name Orchis conveys the idea of one of those mysterious, gorgeous epiphytic children of the tropical forests; unaware that in our own woods and meadows are found many members of the Orchid family, and among them some of the most interesting and beautiful of our native plants.

In the accompanying illustration, from Henry Baldwin's Orchids of New England, and for which we are indebted to John Wiley & Sons, New York, is shown the only native species of the genus Orchis proper, popularly called Spring Orchis or, Preacher in the Pulpit. This is the first to bloom in spring, and may be found in shady woods and thickets among rocks throughout the Northern States. It is a pretty little plant with thick, oblong-obovate, shining leaves, and a low stalk of pinkish-purple and white, fragrant flowers. Botanically it is one of our most interesting native plants on account of the peculiar arrangement of its flowers.

Like most of our indigenous Orchidaceous plants it may be taken up in early spring and transplanted to a shady border or in pots; and in so doing the more of the original soil adhering to the roots is taken up in a clump, the better will be the success.

ORCHIS SPECTABILIS.

CULTURE OF HARDY HERBACEOUS PLANTS.

PREPARATION.

It is useless to hope for success with herbaceous plants without, at the outset, making reasonable preparation. Most hardy plants are deeper rooting than bedding plants, and the beds for their reception must be trenched or spaded to a depth of two feet, and well manured. Most herbaceous plants are good feeders and require good soil. Beds must not be located under trees where the roots of the latter can impoverish the soil. The idea that when once these hardy plants are planted they will go on satisfactorily for many years without any further cultivation is one of the greatest delusions possible, for unless the soil is kept in good order the whole thing is a failure, and the vigor of display and bloom ceases to be at its best.

OUT-DOOR CULTURE.

A large proportion of this class of plants is greatly benefited by being lifted every few years and divided and transplanted. Pyrethrums, Phloxes, Delphiniums, Narcissus, and others feel the good effects of division and transplanting at intervals of two or three years. Many make rapid growth and form large clumps, and these should be lifted and divided in early spring, before active growth begins, and successfully transplanted. This facility is a benefit to the grower, who can increase his stock without cost, and contrasts favorably with the constant labor and expense required to keep up a stock of bedding plants.

An annual top dressing of well rotted manure or leaf mould is a great aid to most hardy plants, but they dislike the spade, and ought not to be dug about except when lifted or divided. It is well to let the leaves which fall upon herbaceous beds remain there during the winter, this natural covering and nutriment being beneficial.

One of the favorite arguments against the cultivation of hardy plants is that they do not give continuous bloom through the summer, and that the beds containing them are not so showy as these which afford a mass of color, like the Geranium or Petunia. This is very true where no provision is made for a succession of bloom by cultivating such varieties as come into bloom at different periods of the year. The intelligent grower, however, does not make this mistake; and here it may be said that the greatest loss under the bedding system is that of the blossoming in spring and early summer, of Tulips, Scillas, Grape Hyacinths, Narcissuses, hardy Primroses, Saxifrages, Irises, Fritillarias, Globe flowers, Crocuses and hosts of other choice plants and bulbs rarely seen under general cultivation.

FRAME CULTURE.

Our list of spring-blooming hardy plants would be greatly extended could we include the varieties which are hardy in England, but whose existence through our trying winters is uncertain. Cold frames therefore should be utilized for this class, and a more general use of these conveniences should be favored. In them Violets, Anemones of all the early blooming kinds, Forget-me-nots, Primroses, Hellebores, Hepaticas, Pansies, and many other beautiful things can be grown to greater perfection than in a greenhouse. It needs only to make the possibilities of frame culture known and understood to insure to the amateur who lacks a greenhouse the greatest success with the class of plants named. With frames open to the sunlight and protected by the usual method, one may have flowers in plenty from January to June. The Pansy which is everybody's favorite, is rarely seen in perfection except in a cold frame.

ARRANGEMENT.

The arrangement of hardy flowers in the garden affords so much scope for tastes and knowledge that it would require a volume to make plain the many and various phases of grouping them with an eye to effect and continuity of bloom. The landscape gardener, in laying out lawns, etc., endeavors to form groups of trees and shrubs of contrasting habits of foliage, through which pleasing vistas for the eye may reach. Only the inexperienced will attempt to dot here and there an individual tree or shrub, which by its isolation loses its effect. We must carry this idea into the flower garden, in our arrangement of hardy plants, so far as relates to the grouping of a number of one species or variety together. A hundred Daffodils growing gregariously is a much finer sight in bloom than if the same number were scattered or dotted over the surface of the bed. By carrying out this idea with all the dwarfer plants much better results are attained, and we can extend it, if space permits, in a combination of hardy flowering shrubs in forming beds of hardy flowers.

We can use for the backs of such beds as rest against a wall or fence, and for the centres of beds on the lawns, the dwarfer hardy Rhododendrons, Kalmias, Barberries, *Spiræa Thunbergii*, *Hydrangea paniculata*, and here and there some of the stronger growing Roses, such as Mme. Plantier, Harrison's Yellow, and many of the climbing Roses like the Baltimore Belle, which is a most beautiful sight when left to scramble over a slight support. *Rosa rugosa* and the white variety are two of the finest plants for this purpose, having dark, shining, persistent foliage, not injured by insects, and very beautiful flowers. We may also include hardy Azaleas, Japan Quinces, Viburnums, Weigelias, Andromedas, etc.

In small beds a specimen of these shrubs here and there breaks the level, and relieves the eye as to general effect, besides affording flowers. In larger beds the more dwarfish kinds may be placed, two or three of each together, at intervals, but there should be no crowding.—*E. L. Beard before the Massachusetts Horticultural Society.*

The Window Garden

AND GREENHOUSE.

WINDOW GARDENING FOR MARCH.

We should now have an abundance of flowers, Geraniums, Lady Washington Pelargoniums, Oxalises of sorts, Fuchsias, Callas, Cinerarias, Hyacinths, Tulips, Narcissus, Heliotropes, Carnations, Petunias, Double Sweet Alyssum, Begonias, Meteor Marigolds, and many others. Keep plants in bloom as near the front of the windows as possible. Let all growing plants have plenty of water.

PRUNING.

Shorten the shoots of young Fuchsias, Lemon-scented Verbena and other plants that are likely to become too long and spindly; a short, stocky growth is more to be desired than long slender shoots. In shortening the shoots of plants do not merely pinch off the tips, as that is apt to cause the next end eye to grow out without inducing the lower ones to start; but, instead, shorten the shoots well back, and that will tend to cause all the lower eyes to grow out together.

REPOTTING PLANTS.

Plants that we have kept for winter blooming as Carnations, Chinese Primroses, Cyclameus, Callas and Libonias should not now be repotted; but young plants of Fuchsias, Lady Washington Pelargoniums, Scarlet Geraniums, Petunias and Marigolds that we desire to come into bloom between now and next June may be repotted. Young plants of Geraniums, Coleuses, Ageratums and other summer garden flowers that have been wintered in small pots, or several in a pot, may now if we have room for them, be shaken out and repotted.

In repotting summer garden plants the ball of roots should be unravelled, else in after months the matted ball will check the vigorous root action of the plants and render them an easier prey to drouth than would be the case were the roots disentangled.

Young plants raised now from cuttings or seeds should be grown along unchecked till they reach their desired proportions, hence should be repotted as often as necessary.

Ferns should be repotted. If their present pots are large shake out the Ferns and put them into smaller pots; if too small change into one size larger only.

Over-potting is very injurious to plants. Many plants will not need repotting, but all need seeing to that the drainage is good, and there are no worms in the soil. Camellias and Azaleas do not need repotting every year, in fact, after they become large plants, once in three or more years is enough. In repotting quick-growing plants that are to remain in the pots only a few weeks as "bedding" plants in spring, or free-rooting plants in small pots at any time, draining the pots is needless; but in the case of Cyclamens, Pelargoniums, Cytisus, and other plants that we bloom in pots, draining is an advantage.

The drainage may consist of broken pieces of pots, pounded bricks or rotten stone or similar material, and over that some half rotted leaves, dry chaffy manure, or rough soil, but the common plan of a bunch of sphagnum moss is not to be commended unless the moss is chopped up fine.

SOWING SEEDS.

If you have a greenhouse you can sow at any time; if a hot-bed, after the middle of the month; if only a cold frame, then not before April; if a window only, it depends on the warmth of the room whether you sow at once or wait till the end of the month. Seeds require heat and moisture to induce them to vegetate, and light to develop healthy seedlings.

For the window use pots, pans, boxes, plates, saucers, or anything that will hold a little soil and let surplus water drain off readily. Light sandy soil as old leaf mould or fine wood soil mixed with sand is good; fill the vessel nearly to the brim, firm the soil by giving the vessel a sharp tap on the table but don't pack the soil with your hand, sow evenly over the surface and cover very thinly with fine earth. Then water gently through a fine spray rose, and place the vessels near the light but shade them from sunshine, and protect from draughts and drip.

Remove each and every bit of mould-fungus as soon as you see it, and when the seedlings come up, prick them off as soon as you can handle them, into other pots or boxes. The great thing to guard against in the hot-bed is "damp." Hot-beds must be ventilated else the germinating seedlings are apt all to mould off.

Centaureas ("Dusty Millers"), Vincas, Verbenas, Globe Amaranths, Cockscombs, Celosias, Golden Feather Pyrethrum, Lobelias, and other plants that take considerable time before they become large enough to set out should be sown as soon as possible. Stocks, Asters, Marigolds, Zinnias, single Dahlias and other rank and quick growing plants are time enough in April. There is nothing gained by raising plants so early that we have to keep them in stunted condition till we can find room for them; from the moment a seedling is started till it attains its full proportions we should be ready to grow it along unchecked, else we had better delay its existence till we can give it the room and attention it requires.

RAISING PLANTS FROM CUTTINGS.

Soft-wooded plants like Coleuses, Iresines, Verbenas, Ageratums, Stevias, Gazanias, double white Feverfew, Nasturtiums, German Ivy and Heliotropes root easily and quickly from cuttings at this time of the year, so too do cuttings of the young growths of shrubby plants as Fuchsias, Lantanas, Lemon-scented Verbenas and Rose Hibiscuses. The wood used should be the young succulent points and so tender that when bent they will snap off. In the case of Coleuses, Alternantheras, Lobelias and many others it is only throwing time away "making" the cuttings, just stick them in as you pluck them off, they will root as well and readily as if they were "made." But Geraniums, Dahlias, Heliotropes, and many others root more evenly and usually sooner when "made."

By "making" a cutting I mean cutting it off under but close by a joint and removing the two lower leaves. Therefore I should advise amateurs to "make" their cuttings except in cases where experience has taught them that success is as certain when the cuttings are not made.

Cuttings will strike in almost anything that is damp, from pure sand to brick clay, even in water alone. But for spring work I prefer clean sand.

WM. FALCONER.

HANGING BASKETS.

There are great many positions both in greenhouse and parlor where hanging baskets make beautiful ornaments. How attractive a hanging basket looks suspended from the centre of a large window, when well filled with good healthy plants and vines drooping over the edge. Not only is it enjoyable to the occupants of the house, but from the outside it betokens love and comfort within. A few hanging baskets suspended during summer along the front of the veranda are always beautiful. In the greenhouse or conservatory there are a good many places where they do well, especially in partially shaded spots.

In positions where the sun shines very brightly there are few plants which succeed well hanging close to the glass. There are some, however, which are at home in just such a situation, requiring considerable sun to insure a good supply of flowers, such plants as *Epiphyllum truncatum*, *Cereus flagelliformis* and some of the bright flowering *Sedums*. I may add another beautiful plant for the position, *Crassula lactea*, which during the winter months produces from the point of every well matured shoot a spike of beautiful star-shaped pink flowers. The above plants do best when growing in baskets, alone without any other associates; they look better, flower more freely and show their distinctive characters only when grown alone.

In pictures we often see fine looking terra cotta baskets filled with Ferns. I am led to believe from experience with Ferns in terra cotta baskets that the only place to see them looking well is in pictures; but in rustic baskets made from wood and in wire baskets lined with moss some kinds do well, especially as individual plants, best for this purpose is *Nephrolepis exaltata* which if grown in wire baskets, sends its fronds from the bottom and sides through the meshes of the baskets and forms a large ball of beautiful and graceful appearance suitable for either window, greenhouse or veranda. *Davallia Tyermannii*, *Goniophlebium subauriculatum*, *Platyloma rotundifolia*, *Platycerium alcicorne* and many others of a hardy nature succeed well in baskets if regularly supplied with water.

Hanging baskets of all kinds should be constructed to hold a large body of soil, which is a necessary requisite to maintain for any length of time food and moisture for the plants. Shallow terra cotta baskets are poorly adapted for the well-being of plants. They easily dry out and unless extra labor in watering is given, the plants will soon look sickly, there is also not enough soil in them to supply sufficient food for succulent growing plants; only the Cactuses mentioned above and some of the Oxalis do well in them. There is, however, a form of terra cotta baskets which holds a reasonable amount of soil, looks attractive, and plants do well in them for a longer period than in any of the shallow kinds. It is made in the imitation of a log of wood, and having the color of the wood burned in, keeps unfaded as long as the basket lasts.

Wire baskets are the best for plants generally. If lined with a good thickness of moss, they retain the moisture for a long time. When they get thoroughly dry the best way to wet them is to immerse in water

and allow to remain until the soil is moist clear through.

Some of the best plants for culture in baskets, especially when grown as individual plants, are *Fuchsia procumbens*, *Begonia glaucophylla scandens*, the beautiful pink blossoms of which drooping over the edge of a basket are remarkably beautiful; to fully show its beauty it should be grown as a basket plant. English Ivy trained all around a basket is excellently adapted for the parlor, enduring with impunity the dry air of the room. For mixing with other plants, Begonias of all kinds including the Red section, fine-leaved Dracænas, Maurandias, Vincas, Ivy-leafed Geraniums, Thunbergias, Tradescantias, *Peperomia prostrata*, and any easily grown drooping plants are suitable.

M. MILTON.

A NEW WHITE PINK.

The almost exclusive use of white flowers for Easter decorations creates an immense demand for nearly every kind of white flowers that can be forced into bloom at this season, and offers a ready and remunerative market for really meritorious flowers of this class. The new Pink "Snow," represented in our illustration, and now being introduced by Peter Henderson & Co., New York, appears to be particularly valuable for forcing for cut flowers in winter. It is specially suited for the Easter holidays says Mr. Henderson, as it forms a perfect mass of snow white flowers, whether grown in pots or on benches. It is entirely distinct from and much superior to the old White Scotch Pink, being nearly double the size, and of the most exquisite clove fragrance. It is a true Florist's Pink, and consequently entirely hardy, thus making it a valuable plant for the flower garden as well as for forcing.

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THE NEW WHITE PINK "SNOW."

SPRING FLOWERING BULBS.

Seldom have flowering bulbs been so fine as this spring. Tulips are gorgeous in color; the texture of their petals appears like silk. Pink varieties are in brisk demand for dinner centre pieces, the "Cottage Maid" being the leading favorite. This lovely pink and white variety is frequently used for the corsage bunch, which is somewhat of an innovation, as Tulips are not considered a suitable flower for personal ornamentation. If, however, Cottage Maid Tulips have their foliage turned down, they are charming and æsthetic for the bodice bouquet.

The Holland Hyacinth crop is very handsome, and newly imported varieties are eagerly sought for all decorations, while these can be placed in moss or left in the pots. They are extremely satisfactory because they last so long and are bright and sweet-scented until entirely withered. "Porcelain Sceptre" is a variety that is very popular for the delicacy of its lavender tint.

Snow-drops have been forced for the first time in this country this spring. A florist planted a dozen bulbs in colored potteries, made for the purpose, and when the dainty white bells flowered, used them for dinner favors, placing one dish at each cover.

Lily of the Valley has been forced in high pyramid potteries with holes for the flowers to start through. These are very effective for table centres or greenhouse decoration.

The *Freesia* is becoming a favorite flower and is used particularly for *boutonnieres*, which are worn very large as in England. One dozen sprays of Roman Hyacinths are used for the coat knot, and eighteen sprays of Lily of the Valley, but large *Gardenias* are preferred above all other flowers, for the *boutonniere*.

PRIMROSES.

Seedling Primroses, always admirable, are unusually so this season. There are a number of new seedlings which have made a sensation. The Chiswick Red are the favorites. Groups of these plants are found in the best decorations, and the trusses are frequently cut to ornament the dinners and luncheons given to young people.

Yellow English Primroses are just appearing in small quantities, these are all engaged before they blossom, so highly are they prized. A bouquet of Yellow Primroses with a cluster of the dark purple Czar Violets at one side brought a fabulous price for a birthday souvenir.

LILACS.

These shrubs are forced in marvellous beauty at present, the tassels seeming to have the full strong bloom of summer Lilacs. The soft French Lilacs, of the variety of Charles X, were the first sent from the greenhouse; these were nursed in shaded conservatories as tenderly as invalids, that they might be pale, or have only a faint tint of color. They sold for one dollar a tassel. At present common Lilacs are forced, and entire bushes of these are cut for filling high vases in large decorations. They make the softest and loveliest effects, and bear the breath of the June gardens.

OUR WINDOW BOX.

The Calla is one of the few house plants that does not suffer when constantly kept in a saucer filled with water.

Start a few Gloxinias, Achimenes and tuberous-rooted Begonias now. Give them very little water till they begin to grow.

Fresh air is as necessary to house plants as to ourselves, but they do not like strong and sudden draughts any more than we do.

If you want to kill your sickly plants with kindness, give them strong liquid manures; it is as effective as feeding a dyspeptic with rich, indigestible food.

Sand used for starting cuttings should be washed, by putting a quantity into a tub or pail, fill up with water, stir around with a stout stick and then drain off the water.

"THE WISE GETTING, GIVING AND SPENDING OF MONEY ARGUES THE PERFECT MAN."

Any person to whom time is worth less than money and wants to start a plantation of Marlboro Raspberries or Niagara White Grapes will do well to read our offer on page 63.

Lawn and Landscape.

HOW TO MAKE A LAWN.

The operation of making a thoroughly good lawn requires much painstaking attention in addition to a knowledge of drainage and the best methods of treating special soils. We will simply undertake to give a few general directions that will be found in most cases essential to success.

Should moist spots or special growths of coarse grass indicate that such treatment is necessary, the proposed lawn must be drained at an expense probably of $50 to $75 per acre. The first work to be undertaken, independent of drainage, is the removal of stumps, stones and weeds by repeated plowing and harrowing and carrying off or burning. A liberal application of fifty to seventy-five tons of well-rotted stable manure should be next applied to the land. This should be carefully and evenly distributed over the surface, and then spaded or plowed in to the depth intended for the lawn. Some of the best lawns in the world are made by spading to the depth of at least eighteen or twenty inches, but thorough and skillful plowing and sub-soiling accomplishes the necessary pulverizing and mixing and does the work quite as well as spading, provided an equal depth is reached. Deep culture in the preparation of a lawn is of the utmost importance, for on deep culture depends in a large degree the ability of the grass to resist the severe effects of protracted drought.

Having cleaned, deeply plowed and liberally fertilized the soil of the proposed lawn, the next thing is to prepare its immediate surface, or in other words to grade it. Long flowing surface lines should characterize the grade as finally established, and slight elevations or swells more or less pronounced according to the topography of the surrounding territory, should appear immediately around the trees and shrubs and the other outskirts of the tract. Mathematical lines it should be remembered are to be avoided in lawn making. The natural effect is always the best effect to be obtained in landscape gardening and flat surfaces and straight lines are never found in nature's work of this kind. A top dressing of fifteen or twenty tons of old well-rotted stable manure or a ton of ammoniated super-phosphate of lime, or of some reputable lawn fertilizer should now be spread over the graded lawn and then lightly spaded or plowed in so as not to disturb the lines of grade established. The surface should then be once more harrowed and raked carefully. All this fertilizing spading, plowing, sub-soiling, harrowing and raking repeated over and over again may seem like taking unnecessary trouble, but we assure the reader that such repetition of effort is seldom wasted in the endeavor to secure an approximation to soil in which no one inch is more dense than another.

Next in order comes the sowing of the seed. Good mixtures of different kinds of grass seed are offered by all reputable seedsmen and are said to be more effective because of the number of varieties used but we have found Kentucky Blue Grass, *Poa pratensis*, excellently adapted to most soils, a vigorous grower from the start, and fitted to produce a rich green, lasting sod on sandy as well as heavy land. Do not spare grass seed if you wish to make a good lawn. Six bushels to the acre of Kentucky Blue Grass seed is not too much, and you may if you wish, add a few pounds of White Clover seed, although White Clover is apt to work its way into many lawns without sowing. Rake in your grass seed evenly and thoroughly and then at once roll the lawn with a heavy iron roller in order to pack the seed firmly into the ground and thus help materially the progress of germination. Roll frequently during at least the first season, and begin to cut as soon as the hand mower will take hold well. The extra care of frequent cutting and rolling is important for the thickening and even growth of the young grass.

SAMUEL PARSONS, JR.

SOME GOOD NATIVE VINES.

You will probably want something to plant about your veranda or porch, to climb over the gate, or cover an unsightly stump, or the fence that is hardly as ornamental as you would like to have it. If you do, I would advise you to take your basket as soon as the frost leaves the ground, and go to the woods to find the plants which will give you better satisfaction than any others you can get. These may also be procured of many nurserymen if you can not find them in the woods or pastures near you.

VIRGINIA CREEPER.

The *Ampelopsis quinquefolia*, or American Ivy as it is also called is the best climber for all purposes. Everybody knows it. It is to us what the Ivy is to the English, and is quite as ornamental at any season as the Ivy, and vastly more attractive and showy during the fall. It can be found growing plentifully along most swampy places, and is very easily transplanted. It is a rapid grower, often reaching out fifteen or twenty feet in a single season. It clings to smooth surfaces by means of little disks attached to a sort of tendril, these disks acting on the principle of the "suckers" boys like to fashion out of pieces of leather to lift stones with. The foliage is thick, and a wall is soon covered by it. It climbs to the eaves, and will overrun the roof if allowed to do so. Its flowers are a greenish-white, and inconspicuous, but very fragrant. These are succeeded by dark purple berries, borne on crimson stems. These are very attractive after the leaves have fallen. But the plant is most effective in autumn when the leaves turn to crimson and maroon. The plant is one mass, then, of most gorgeous color; indeed, no flowering plant is one half as showy when in full bloom. This vine is excellent for covering arbors, old stumps,—anything, in fact, that it is desirable to cover.

CLIMBING BITTERSWEET.

Celastrus scandens is the botanical name of this beautiful native climber. It is not as frequently met with as the Virginia Creeper, but it is to be found in most places at the North. It is a rapid grower, but not as ambitious as the one already described, seldom reaching a greater height than twenty feet. Its foliage is a very bright green, always clean and healthy. I have never seen it infested with any kind of worm or insect, and on this account it is very desirable for use about the veranda or the porch. It bears profuse crops of scarlet berries, each berry inclosed in an orange husk which parts and turns back from the fruit. These clusters are very showy in autumn and would hang on all winter if the birds would let them alone. They are very useful for ornamenting the rooms in winter, and for Christmas decorations. This vine twines about trees, posts, or anything with which it comes in contact that it can encircle with its long stems. It is an excellent vine in every way, and only needs to be more generally known to become extremely popular. It has far greater merit than any imported vine. In saying this I am not unmindful of the claims of the Wistaria and the various Honeysuckles. Good as they are, the Bittersweet is better.

VIRGIN'S BOWER.

This is the hardy native vine which every collection should include, *Clematis Virginiana*. It is not a rampant grower, but it will fill all requirements for porches, verandas, or summer-houses, or training about windows. It has pleasing foliage, and bears a great profusion of delicate, airy white flowers of delightful fragrance. We have few more desirable plants for supplying cut-flowers for the house. The long branches covered with bloom are simply exquisite for use in vases with flowers of brighter color. They beautify any thing they come in contact with, and harmonize with everything.

E. E. REXFORD.

WHAT SHRUBBERY WANTS.

With our present methods, what is wanted to bring back the shrub to its proper position in the lawn, says Edgar Sanders, is at least when young, free, loose ground. If this interferes with the regulation lawn, fringe the borders of the shrubbery with hardy perennials of low, growing character; but by all means keep the grass roots out, and the mowing machine man away from the branches. Treated thus, all the stronger shrubs will make a vigorous growth, and when they have arrived at the smothering age, and can compete with the grass, sometimes it may pay to forsake the border and form a belt. It will be the grass that will usually suffer then. Finally, if any one wants to see what a shrub requires, let him go to a good nursery, and our word for it, if the ground is kept loose and friable, the weeds eradicated and each plant given room to spread its branches, he will find a perfectly symmetrical growth of luxurious branches; and if this treatment is continued, the shrub will go on in the same way, a thing of beauty, and a credit to any place, large or small.

HARDINESS OF MAGNOLIA GRANDIFLORA.

The *Magnolia grandiflora* is hardy not only as far north as Philadelphia, as stated in the last number of the AMERICAN GARDEN, but it will live and bloom on Long Island, so says Dr. J. W. Barstow of Flushing.

The same authority also informs us that our native Azaleas, the white and the pink may be easily transplanted from roadsides and open places, and will do well under cultivation.

Kalmias taken from the woods are almost always sure to die, but good plants from nurseries will, with proper care, grow well and form beautiful shrubs. Many of our native shrubs are very desirable for the lawn.

Foreign Gardening.

FRUITS OF THE AMAZON.

(Continued from our last number.)

CO-CA-CHE-SE-BA.

This fruit much resembles the Cocoa Plum in general appearance but is far better, the pulp being sweet and pleasant. It is a tall tree often found overhanging the river on the middle Amazon and we have repeatedly gathered it while paddling up the river.

GENIPAPA (GENIPA.)

Of these are several species which produce brown fruit about the size of an Orange the flesh is yellowish white with small hard seeds, acid sweet but with a rank smell and not good. The juice of the unripe fruit of one species is used in tatooing by the Indians, becoming indelible if pricked into the skin.

PASSION FLOWERS.

Many of those produce edible fruits varying in size from a Walnut to that of a Melon. When ripe they are orange yellow, a spongy tissue inside usually inclosing an acid pulp full of small black seeds; but *Passiflora macrocarpa* has a flesh resembling in color and taste a rich Musk-melon. These fruits are called "Masacuja."

CACTUS.

Two species of Cactus yield an edible fruit; they are tall with angular stems, one, *Cereus Brasiliensis*, being always a very effective plant from its tall bluish green stems and numbers of large white night blooming flowers. The fruits are red, full of small seeds and of sweet pleasant taste.

TAPESIBA.

From the delta at Para far up into Peru this is a favorite fruit. The tree *Spondias lutea*, is very ornamental with light green foliage and clusters of sweet white flowers. The fruit is yellow, acid and very pleasant but if taken in quantity makes the tongue and mouth sore. It is best infused in water and with the addition of a little sugar, makes a delicious drink. All wild animals are very fond of this fruit and the vicinity of a Tapesiba in fruit is a good place for the hunter. Another species of this family *S. cytheria*, native of the Sandwich Islands, is sometimes found in gardens in Brazil. The fruit is larger, round and more acid and only used for sweetmeats.

MIRIXI.

A small tree producing a greenish fruit which resembles in shape a small flat button. In the season the ground is covered with this fruit which is sweetish and mealy and seems to be a food of the large blue butterfly *maspho* which is always there found in great numbers. Two fruits especially plenty on the river, Tapojos above Santarum are the Aápiranga and the Uniri. The former is small, red, looking like a Sand Plum with a sweet pulp, the latter has a wider distribution and is the tree which produces the rich balsam of Umiri, it is a black drupe with a rich sweet taste.

UVAS.

Above Jeffe on the Amazon and far into Peru a very delicious fruit abounds called "Uvas" or Grapes from the resemblance to that fruit. The tree has very large palmate leaves and produces the fruit in heavy roundish bunches close to the trunk. The fruit is black like an immense flat Grape with a tough skin, and full of a sweet viscid fluid around an almond-like seed.

Our space is failing us and we have none to write of the wild Cocoa, of the "Wishi Yuen," and "Wishi cusua" both with yellowish sweet flesh, the fruits brown with smooth stone the latter black with deep furrowed stone and both of delicious smell, of the "Cuma" and "Uike" and "Pama" of the upper river, and many others, many good, some inedible except to the natives, but none take the place of the berries of the United States or are equal in flavor to a second rate Strawberry. E. S. RAND.

COUNTRY LIFE IN FRANCE.

France is literally one large garden, writes a correspondent of the New York Sun. Every inch of soil is cultivated. In riding from Paris to Dijon, 150 miles, we counted only thirty cattle. We saw no sheep or hogs. The farms are usually from one to ten acres. Some farms have half an acre, and some have as many as twenty acres. They are usually 30 to 300 feet wide, and from 1,500 to 2,000 feet long. There are no fences between them.

When I asked a French farmer how his farm happened, like all the rest, to be so long and narrow, he said:

"It has been divided up so often. When a French father dies he divides his farm, and each one of his children has an equal share. He always divides it lengthwise, so as to give each one a long strip."

"How large is your farm?" I asked.

"My father's farm was 300 feet wide and 2,000 feet long. When he died my brother had half. Now my farm is 150 feet wide and 2,000 feet long. It is quite a large farm. There are many farms much smaller than mine."

"What do you plant in it?" I asked.

"See over there," he said, pointing to what seemed to be a gigantic piece of striped carpet, "is a strip of Wheat sixty feet wide. Then comes a strip of Potatoes 25 feet wide. Then come 40 feet of Oats, then 10 feet of Carrots, 20 feet of Alfalfa (Luzerne) 10 feet of Mangel wurzels, 5 feet of Onions, 5 feet of Cabbage, and the rest in flowers, Peas, Currants, Gooseberries, and little vegetables."

"Can you support your family on a farm 150 feet wide and 2,000 feet long?" I asked.

"Support my family?" he exclaimed. "Why the farm is too large for us. I rent part of it out now."

"But your house," I said, "where is that?"

"Oh, that is in town. Five families of us live in one house there. My wife and I come out every morning to work and go in at night."

"Does your wife always work in the field?"

"Yes. My wife," he continued, pointing to a barefooted and bareheaded woman at least six feet around the waist, "she can do more work than I can. She pitches the hay to me on the stack. All French women work in the field. Why not? They have nothing to do at home."

This is true. The wife of a French farmer has nothing to do at home. They do not keep house like the wives of American farmers. The handsome farmhouse, off by itself, surrounded by trees and gardens, does not exist in France. French farmers always congregate in little, tumble-down villages situated about two miles apart. The roofs are moss-covered, the houses are dirty, and remind one of a country poorhouse in New England.

There are millions of farms in France containing from a quarter of an acre to four acres. I find that an acre and a-half is about all the most ambitious man wants. The rent for the land is always one-half the crop. The land is worth about $400 an acre; or, if in Grape vines, $600.

That is why France is like a garden. In England there are 227,000 landowners; in France there are 7,000,000 landowners. The Frenchman on his two acres, with his barefooted wife cutting grain with a sickle by his side, is happy and contented, because he knows no better. Such a degrading life would drive an American farmer mad. The Frenchman thrives because he spends nothing. He has no wants beyond the coarsest food and the washings of the Grape-skins after the wine is made. Yet, he is thrifty. He saves money, too. The aggregated wealth of 30,000,000 poor, degraded, barefooted peasants make France rich. The ignorance of the French farmer is apalling. I never saw a newspaper in a French farm village. The Frenchman eats the coarsest food; about the same as he feeds his horse. He will eat coarse bread and wine for breakfast; soup, bread and wine for dinner, and perhaps, bread and milk for supper; he does not know what coffee or tea is. The negros of the South live like kings compared to a French farmer. Still the Frenchman is satisfied, because he knows no better.

GARDENING IN JAPAN.

Except in the gardens of the Buddhist Monastery of Hangtse in China, I have never seen anything approaching in singularity to these productions, but the gardeners of Tokio are far more daring than the monks. Bushes and shrubs, cut into the life-size resemblances of men and women, are equipped with faces of painted wood or paper, the clothes, fans or weapons being formed of carefully trained leaves and flowers, which fall in artistic draperies of delightfully harmonized colors. In one scene a tree represents a monster fan, two others a bridge with a ship passing underneath it, then a landscape with a picnic, and a setting sun of gold-colored Crysanthemums is wonderfully executed. Chinese women walking, and animals, especially hares and rabbits, are also represented by this singular art. Scenes from well-known plays are the most enduringly popular of all these scenes, and one of the mythic heroes of Japan, shown in combat with an eight-headed monster, while the lady, for whom he is fighting, sits apart, clothed in red, yellow and white Chrysanthemums, the whole forming a landscape over thirty feet long, is always the centre of joyous crowds in late October, when the sun is warm and the air is still.—*Unbeaten Tracks in Japan.*

MELONS IN SOUTH AMERICA.

The Musk Melons grown here, writes our correspondent, are not nearly as good as in the United States. And Watermelons, of which the variety chiefly grown resembles the Mountain Sprout, do not attain a large size, and in spite of the hot sun are lacking in sweetness and flavor.

Exhibitions & Societies.

NEW YORK HORTICULTURAL SOCIETY.

The leading feature of the February exhibition was the many beautiful Roses which covered the tables and filled the air with the breath of June. John Henderson's collection, comprising all the leading and several new varieties, all in excellent specimens, was awarded the first prize. A dozen Bon Silene from A. McKellar, Catherine Mermet from A. S. Burns, and a large bunch of La France from Eugene Dailledauze were as perfect as we ever saw these varieties. All were awarded first prizes.

Orchids came next in prominence. W. C. Wilson exhibited *Dendrobium Wardianum*, *Phalænopsis amabilis* and *grandiflora*, *Celogyne cristata*, *Lælia autumnalis*, *Oncydium tigrinum*, *Cypripedium longifolium*, and several varieties of *Catleya Trianæ*. Hallock & Thorpe showed *Dendrobium Wardianum*, *Lycaste Skinneri* and *Cypripedium Harrisianum*. Charles E. Parnell showed a large bunch of flowers of *Dendrobium amabile*.

Henry Sackersdorf exhibited a highly ornamental and tastefully arranged stand consisting of a straight stem about three feet high and covered with Smilax; on the top was fastened a tin vessel with water, hidden from view. In this were arranged long, blooming branches of *Acacia pubescens* gracefully drooping all around somewhat in the shape of an open umbrella. Another stand similarly arranged with *Euphorbia jacquiniflora* was exhibited by William Daniels who showed also some unusually well-grown Poinsettias.

Hallock & Thorpe were as usual strong in Carnations and Geraniums, of both of which they showed large and remarkably fine collections.

A new seedling Carnation "Douglaston" which attracted much attention, and was awarded a first prize, was exhibited by Albert Benz. The flower is very large, perfect shaped, of light buff color and carmine striped. The same exhibitor showed also excellent bunches of Violets, Lily of the Valley and a new seedling Calendula, very large, deep orange and highly promising.

Siebrecht & Wadley's exhibit consisted of several miscellaneous collections, very fine Primulas, Hyacinths, Tulips, Orchids and others.

A collection of seedling Amaryllis exhibited by John A. Gardiner was one of the most meritorious features of the exhibition and deserves special mention.

The display of vegetables consisted of Mushrooms, Cauliflowers and Cucumbers. A plate of Anjou Pears, grown in 1884, still in perfect condition.

During the business meeting William Bennett recommended as an infallible remedy for mildew in greenhouses, to paint the hot water or steam pipes with a mixture of sulphur and linseed oil. Sulphur alone is frequently found to injure the foliage of the plants, but the addition of the oil is said to mitigate this effect.

The first spring exhibition will be held on Tuesday, March 3d, from 2 to 5 p. m., in Horticultural Hall, 26 & 28 West 28th street. Intending exhibitors may obtain premium schedules by addressing the secretary, J. Y. Murkland, 18 Cortlandt street, New York.

AMERICAN INSTITUTE FARMERS' CLUB.

The meetings of this club are held every second and fourth Tuesday of each month at 1:30 P. M., in room 24, Cooper Union, New York. At the meeting held February 10th, Mr. Peter Henderson read the following excellent paper:

HOW PORTIONS OF THE FARM MAY BE PROFITABLY USED FOR GROWING FRUITS AND VEGETABLES.

An experience of over thirty years as a market gardener and seedsman has given me opportunities for observation that enable me to speak understandingly on this subject. I believe it is safe to say, of my own knowledge, that there are hundreds of farmers in nearly all parts of the country each season who strike out from the old stereotyped crops of the farm into growing a few acres of either vegetables or fruits, and in many cases both and not a few have abandoned the farm for growing farm crops and have devoted their whole energies to the growing of fruits and vegetables.

Last week I had a visit from a man living in the vicinity of Rochester, N. Y., who came to thank me for advice given him a dozen years ago in this matter, when he timidly made the attempt of growing half an acre of his fifty acre farm in vegetables for a village market. His venture was so satisfactory that he gradually increased his area, so that he has now thirty acres used mostly in growing early Cabbages for the Rochester market. He further informed me that his net profits from the Cabbage garden were last year $6,500, or a little over $200 per acre, and that it was not a very good year for Cabbages at that. We market gardeners in the vicinity of New York would not be content with a profit of $200 per acre on our high priced land, but it would be more than satisfactory to most farmers.

Another marked case where a farmer in the vicinity of Baltimore has been cultivating for six years past over one hundred acres in Hackensack Melons, which are sold in New York at prices that give him over $5,000 a year profit from the same land that in Corn or Wheat did not net him one-tenth of that sum.

In another instance that came under my personal observation, a college bred man of twenty-eight, failing in health from office work, purchased a farm of sixty acres at Northport, L. I. three years ago. The second year he tried a few acres in vegetables and small fruits, which he found sale for in the village of Northport at most satisfactory prices. I was on his farm in the summer of 1883, and I must say that for a man who had obtained his knowledge almost entire from books his venture looked as if it would be a complete success. I will say, however, that he buckled up his sleeves and worked from sunrise to sunset. I have but little doubt that he will yearly increase his area for vegetables and fruits, and that his farm like hundreds more of those on Long Island will be eventually converted into a market garden for vegetables and small fruits.

The now famous Celery growers of Kalamazoo, Mich., were less than twenty years ago nearly all farmers who could scarcely make ends meet. Now the profits derived from the culture of Celery have made many of them comparatively rich, that is rich for tillers of the soil, for few such make mammoth fortunes, if we except their riches in vigorous health and placid minds. In a paragraph from the Philadelphia Ledger of last week I find the following, in relation to Celery growing in Kalamazoo, Mich.: "What was a dozen years ago a swamp is to-day a vast Celery field, beside which a hundred acre lot is but a garden. The shipping season begins in July, increases until the holidays, then gradually decreases until the crop is disposed of in the spring. Fifty tons daily are now being sent out, and the crop of 1884 will reach five thousand tons. Twenty thousand stalks are raised upon an acre of ground." This is a very moderate estimate of the number of plants per acre, which is in reality probably one half more, as we grow nearly thirty thousand plants on an acre, which averages two cents per root wholesale, or six hundred dollars per acre. The 5,000 tons shipped from Kalamazoo bring probably $150,000 annually.

Another case in point which has been communicated to me by a friend is as follows: His farm adjoined a village of two thousand inhabitants. One year when he had a large surplus of Strawberries and Sweet Corn which he had grown for his own family, and having many applications for the fruit and the Corn by the village people, he conceived the idea of employing a man with a cart to supply this unexpected demand in the village. These products were sold at such prices as paid a clear profit of $175 per acre, which was about five times as much as the average value of the farm crops. In addition, the sale of the Strawberries created a large demand for cream which was equally profitable. No doubt this example could be followed in the neighborhood of nearly every village in the country.

It is not advised, however, that any farmer should in the beginning embark largely in growing vegetables and fruits. Nearly all who have been most successful have, like my Rochester friend, started with a small patch, increasing the area as their means and the demand for the products justified. Those who can most advantageously use their farms for the culture of fruits or vegetables are such as are located near towns or hotels, and large summer boarding-houses. As the fruits and vegetables usually furnished to such places are shipped from the large cities after passing through the hands of commission men, who of course must take their profit, usually they arrive in a stale and battered condition, and cost three times more to the consumer than the original grower gets. As a matter of fact the vegetables and fruits usually served at first-class hotels and fashionable summer boarding-houses fifty or a hundred miles from New York, where the guests pay three and four dollars a day, are no better than those to be found in the cheapest restaurants in the large cities, though they have cost the proprietors three times as much. In the great majority of cases these crops could be grown profitably in the vicinity and served fresh from the ground daily.

In a paper necessarily as short as this must be, detail of operations cannot be given, nor is it necessary, for all that need be said on these subjects has been given in the books on fruits and vegetables already published. I will merely give a few leading instructions of the best conditions, and to do this I will take the liberty to quote from a work that I have just written.

"Whenever choice can be made the land used for such purpose should be as level as possible, and should be of the nature of what is known as sandy loam that is, a dark colored rather sandy soil overlaying a sub-soil of sand or gravel. All soils that have adhesive clay for their sub-soils are not so well suited for fruits or vegetables, besides requiring at least double the amount of labor for cultivation. Above all things necessary to success in growing either vegetables or fruits is manure. It may be laid down as a settled fact that unless manure can be obtained in sufficient quantity the work is not likely to be half as renumerative as where plenty of it can be had. The quantity of manure used per acre by market gardeners around our large cities is not less than seventy-five tons per acre each year, and if barnyard manure is not accessible, concentrated fertilizers such as bone dust or superphosphates should be harrowed in the land, after plowing, at the rate of not less than two tons per acre, if no other manure is used. Such large quantities of manure will no doubt be appalling to the average farmer, as it is no unusual thing for a farm of fifty acres to get no more than market gardeners put on a single acre; but everyone who has had experience in growing vegetables or fruits knows that the only true way to make the business profitable is to use manure to the extent here advised."

It is safe to say that the average profits to the market gardener in the vicinity of our large cities, where he annually pays sometimes as high as $100 per acre for rent, is at least $300 per acre. The usual amount of ground cultivated by market gardeners is ten acres, and they think it is a poor year when their profits from that amount of land do not average $3,000, and that too when nearly all the products are sold at wholesale.

The kinds of garden products that would be found most profitable would be I think, in small fruits, Strawberries, Raspberries, Blackberries, and Grapes. In vegetables, Asparagus, Beans, Peas, Beets, Cabbage, Cauliflower, Celery, Sweet Corn, Cucumbers, Melons, Radish, Spinach, Squash, Tomato and Turnip. Of the varieties of these I will say nothing, as the kinds adapted to one location may not always be suitable in another. A good rule where you go to a nursery, seed or implement warehouse, if you are not well posted, is to ask the clerk what kinds he sells most of, be it fruit, plants, vegetable seeds, or implements, and you will be safe in choosing such, if you have no particular choice, for it is most invariably the case that the general public find out what has most merit and such too as would most likely be suited for most locations.

The reading of this paper, for which a hearty vote of thanks was tendered to Mr. Henderson by the club, was listened to with a great deal of attention by all present; and the discussion which followed as well as Mr. Henderson's answers, cheerfully given to the many questions put to him, were of much practical value and interest. We much regret that our limited space does not permit of a full report of the same.

Those of our readers living within convenient reach of New York, or when on a visit should not miss to attend these meetings; they are entirely free, and all persons interested in horticultural and rural affairs are heartily welcomed.

AMERICAN POMOLOGICAL SOCIETY.

TWENTIETH SESSION.

The Michigan Horticultural Society having invited the American Pomological Society to hold its next meeting in Michigan, the undersigned give notice that the Twentieth Session of this National Association will be held in Grand Rapids, commencing Wednesday, September 9th, 1885, at 10 o'clock a. m., and continuing for three days.

All Horticultural, Pomological, Agricultural, and other kindred associations in the United States and British Provinces are urged to send delegations as large as they may deem expedient, and all persons interested in the cultivation of fruits are invited to be present and take seats in the Convention. It is expected that there will be a full attendance of delegates from all quarters of our country. No effort will be spared to make it the largest and most useful meeting ever held by the Society.

The Catalogue of Fruits published by the Society includes nearly all the States and Territories, and is filled with a great amount of information as to the fruits adapted for culture in the respective locations. Some of these are yet incomplete, and it is the object of the Society, from year to year, to fill the blanks and bring its Catalogue nearer to perfection. To accomplish this object as fully as possible, the Chairman of the General Fruit Committee, W. C. Barry, Esq., Rochester, N. Y., will send out the usual circulars of inquiry.

When we consider the great importance of fruit culture in North America, its rapid progress during the last thirty-five years under the beneficent action of this Society, the great value and rapidly increasing demand for its products at home and abroad, we feel warranted in urging the attendance of all who are interested in the welfare of our country and the development of its wonderful resources in this branch of agriculture.

Arrangements will be made with hotels and the railroads of Michigan for a reduction of fare. In most cases it will be best for delegates to arrange for rates with the roads in their localities.

An efficient committee has been appointed by the Michigan Horticultural Society to make all necessary arrangements for the exhibition of fruits, the reception and accommodation of the members and delegates of the Society. The committee consists of Hon. Byron G. Stout, Pontiac; Hon. H. G. Reynolds, Old Mission; Hon. A. J. Webber, Ionia; Hon. W. K. Gibson, Jackson; Hon. W. L. Webber, East Saginaw; Judge J. G. Ramsdell, Traverse City.

Good and ample accommodations will be furnished the delegates, the collections of fruits, and a convenient and quiet hall for the sessions.

In accordance with an invitation from the State Board of Agriculture, after the meeting, the members and delegates who desire it, will visit the Agricultural College.

The Society encourages an exhibition of choice fruits, especially new varieties or novelties.

It is earnestly requested that no duplicates appear in any collection, and that none but choice specimens be placed on exhibition. Exhibitors should not fail to give notice, as far as possible at an early date, what room will be needed for their fruits. Six specimens of a variety will be sufficient, except in fruits of unusual interest. A limited number of Wilder Medals will be awarded to objects of special merit.

Packages of fruit should be addressed to Charles W. Garfield, Grand Rapids, Mich., for the American Pomological Society. Freight and express charges on packages prepaid.

All persons desirous of becoming members can remit the fee to Benjamin G. Smith, treasurer, Cambridge, Mass. Life membership, twenty dollars; biennial, four dollars. Life members will be supplied with back numbers of the proceedings of the Society as far as possible.

MARSHALL P. WILDER, Pres., Boston, Mass.
Prof. W. J. BEAL, Secy., Lansing, Mich.

AMERICAN HORTICULTURAL SOCIETY.

MEETING AT NEW ORLEANS.

One of the chief organizers of the New Orleans Exposition, and the head of the Horticultural Department is Mr. Parker Earle, president of the former Mississippi Valley now the American Horticultural Society and it was therefore not only fitting and proper but necessary as well, that the annual meeting of the society should be held at the Exposition. Many feared that the distance from central points and the overshadowing attractions of the city and Exposition would result in a failure of the meeting, but all such fears proved groundless, and the attendance was large and the papers and discussions were of wide scope and great value.

A very excellent opening address was made by President Earle, detailing the difficulties surmounted, and the work accomplished up to that date January 14th. An immense glass structure had been erected in which a fine collection of Palms, Orchids and Cactus were already in position; a collection of every known variety of American grape vines, and the largest and most interesting exhibit of Apples ever gathered in the world. There were Apples from all portions of the United States, from Canada, Manitoba, the Highlands of Mexico, England, France and Russia. Outside in the grounds were planted 200,000 Dutch bulbs, and over 8,000 varieties of American trees and shrubs.

Papers were read by C. B. Merwin of Tennessee, and Judge Wm. Parry upon *Cross-fertilization*, which with the discussion following fully proved that the male parent has a greater or less influence in Strawberries and other fruits that are a part or are immediately borne upon the receptacle the part influenced.

A paper by J. S. Collins of New Jersey brought out a full talk upon cold storage. Mr. Collins stated it to be the practice in his State, to store fruit in rooms below ice-houses. The drip was not detrimental to Apples and Pears. Berries were protected by covers. Concord Grapes are kept four to six weeks in New York, by placing them upon the ground and covering with a foot of leaves which were wetted daily.

E. Williams of New Jersey read an excellent paper illustrated with drawings on *Pruning the Vine*, followed by one from A. O. Kendel of Ohio, on the *Culture and value of our native Grapes*. A lively discussion upon Grape rot and bagging Grapes followed. Facts were given by A. J. Caywood and

others to show that bagging protected and paid, a part of the profits resulting from protection against birds, insects and early frosts. A thousand bags costing $1.50 could be pinned on in a day by an active girl. Mr. Kendel thought the Catawba ripened two weeks earlier now than when first introduced into Cleveland thirty-five years ago. Mr. G. W. Campbell thought the facts did not bear out Mr. Kendel, although it was contrary to the laws of acclimation, the Catawba originating in North Carolina.

A paper on *Some Hints toward the Landscape Improvement of Country Homes* was read by L. B. Pierce of Ohio. Secretary Ragan said the paper filled a very important hiatus in the literature of the society and he was glad that it recommended the employment of native trees and shrubs. The cost of such was less while the beauty of many could not be exceeded. The lack of beautiful surroundings was a marked feature of too many homes in America and we should smile upon every effort and every word that threw light upon the subject. President Earle said he was glad the paper had been presented. Many began wrong end first in planting their homes. He would plant the ornamental first, the fruit bearing trees afterward. He could buy Apples, but he could not buy the changing and wonderful beauty that his evergreen trees presented at all times of the year.

E. T. Hollister of Missouri presented a paper on *Fraternity*; P. M. Angur of Connecticut on *Cranberry Culture*; F. S. Earle on *Fungoid Diseases of the Strawberry*; G. H. Wright of Iowa on *Forest Planting in the Northwest*, all interesting and all followed by instructive and valuable discussions.

Charles Gibb of Quebec and Prof. Budd of Iowa gave valuable information about Russian Apples and other fruits. Very interesting and startling facts were given in reference to the growth of Cherries in Northeastern Russia. Prof. Budd thinks "the time not far distant when the whole Northwest will grow Cherries as easily and plentifully as Tennessee grows Blackberries."

The tree agents became a subject of discussion and resolution, but no one could be found to condemn them totally, many thinking them to be something like the rum-laden ship that took out the first missionaries, a combination of evil and good. Prof. Riley gave an interesting lecture on insecticides.

Dr. Maurice, Commissioner of Jamaica, addressed the meeting on horticulture in that island. The Banana, he stated, was chiefly grown as a shade or nurse to protect young Coffee and Cocoa orchards; it costs $25 per acre to plant Bananas, and the return was from $50 to $75 in eighteen months, and about the same annually for five years, when they no longer bare good sized bunches, and the room was needed for the growing orchards. Oranges grow wild every where in cattle pastures, and the first step in establishing a grove is to refrain from cultivation, when the young trees spring up and could be transplanted and grafted. A great many Cocoanuts are grown in Jamaica. They bare at eight years from planting, and yield an average of $22. There are many fruits grown in Jamaica that might be objects of export did they not come at a period when American fruits were plentiful. Experiments are constantly going on in reference to canning and preserving these, and introducing them to the great fruit markets of the world.

Among fruits that attracted a great deal of attention was the Japanese Persimmons. Many excellent specimens were shown from California and the South. Their carrying qualities are said to be such that, ere many seasons, we may hope to see them in northern city markets.

Altogether the month of January, 1885, was not only a red-letter month in the history of the American Horticultural Society, but in American Horticulture as well.

TALLMADGE.

MASSACHUSETTS HORTICULTURAL SOCIETY.

The Chairman of the Committee on Gardens, Mr. John G. Barker announces the following schedule of prizes for the year:

HUNNEWELL TRIENNIAL PREMIUMS.

For an Estate of not less than four acres, which shall be laid out with the most taste, planted most judiciously, and kept in the best order, for three consecutive years, a prize of	$160
For an Estate of not less than three acres, on the same conditions,	120
Second prize,	80
In gratuities,	40
	$400

SOCIETY'S PRIZES.

For the Best Amateur Conservatory adjoining a Dwelling,	$30
Second Prize,	20
For the best collection of Hardy Biennial and Perennial Herbaceous Plants,	20
Second Prize	10
For the best arranged and best kept Flower Garden	20
For the best Peach Orchard of one acre, with full statement of its planting, cultivation and production	30
Second Prize	20
For the best Vineyard of one acre, with a similar statement	30
Second Prize	20

NEW YORK STATE FORESTRY ASSOCIATION.

A meeting to form a State Forestry Association was held in Utica on February 21st. Several interesting and valuable papers were read, and resolutions adopted to the effect that it is the sentiment of the Association that the most careful legislation be had bearing upon the forestry of the state, and that in view of the great interests involved, immediate legislation should be had bearing upon the preservation of the forests from destruction by fire. The Hon. Andrew D. White, of Cornell University, was elected president, Dr. E. B. Southwick, New York, secretary. Among the vice-presidents we notice the name of the eminent veteran horticulturist, Patrick Barry of Rochester.

A CHARITY FLOWER SHOW.

A flower show for charity, to open on March 9 and continue three afternoons and evenings will be given by Dr. Klunder at Fifth avenue and Twenty-eighth streets. A large number of fashionable people will attend. The show, which is to consist principally of roses, will be highly attractive and many novelties in decorations will be on exhibition. Two hospitals are to be benefited by the entertainment.

AMERICAN HORTICULTURAL SOCIETY.

Under its new title, the Society's field of usefulness will be greatly enlarged, and it only remains for the friends of the organization to supply the much needed means for carrying forward the work now so well begun.

The first and second volumes of transactions, now before the world have received the highest commendations of practical horticulturists and pomologists. No pains will be spared to make the next volume excel those in actual value. These books are distributed only to members (whose names, with post-office, appear in the volume) and to patrons of the Business Directory.

The Business Directory contains the names and post-office of the leading fruit-growers, nurserymen, florists, seedsmen, gardeners, fruit dealers and commission men, fruit canning and preserving establishments, manufacturers of horticultural implements and machinery, cold storage, manufacturers of fruit and vegetable packages, manufacturers of labels and nurserymen's supplies, etc., in the country. The volume will also give a roster of officers of all the principal horticultural and pomological societies in this country and the British Provinces. To any one engaged in business related to horticultural and agricultural interests this volume will be invaluable.

The annual fee of membership is $2.00, and all applicants, to insure the publication of names in the forthcoming volume, should be made early, to the secretary, Prof. W. H. Ragan, Green Castle, Ind.

NATIONAL EXHIBITION OF HUNGARY.

In connection with this exhibition, which will take place at Budapest, this summer will be held an International Exhibition of Seeds, Cattle Food and Fertilizers. The special programme which has been received states that the object of this International Exhibition is to acquaint the Hungarian agriculturists with foreign products, and in the interests of the interchange of seeds, also with the foreign places of import, besides to furnish information of the foreign agricultural situations, and to facilitate to foreigners the securing of favorable markets for their products.

CHOICE SLIPS.

In former years all hot-beds were sunken in the ground, now the usual method is to build them on the level ground, except when made during winter, in which case they keep longer warm when lowered.

It is said that Potatoes when dug in an unripe state may be at times watery, and not fit to eat, but if spread as thinly as possible in a dry, airy place, they will in time become as mealy as if left to ripen in the ground.

Any one who has a spring or running stream on his land may have a delicious and wholesome salad the year round, by planting early in spring some slips of Water-cress along the margins.

Plant the most mature and perfect seeds of the most hardy, vigorous and valuable varieties, and as a shorter process, insuring more certain and happy results, cross and hybridize our finest kinds for still greater excellence. So says the Hon. Marshall P. Wilder, the venerable president of the American Pomological Society.

To prevent Hickory seedlings from forming strong tap roots which make transplanting very precarious, a writer states in the New York Tribune that he places a strip of tin in the bottom of a trench about ten inches deep, fills up with soil in which the nut is pressed three inches deep. When the top root reaches the tin, he says, instead of going down it will make small fibres, and the tree can be transplanted safely.

The Overflow.

We have such a store of good things this month that we are obliged to turn out a page full of them here as a sort of "overflow meeting."

Make your head serve your heels.

SPRING FLOWER FASHIONS.

Fashions in flowers were never more pronounced than this spring. The best patrons of florists in New York demand flowers that are fashionable, and no matter how beautiful are blossoms that are out of date, or thrown aside by bouquet makers, there is no sale for them among those who pay large prices and who purchase the cream of greenhouse growth. For this reason it is with trepidation that plantsmen invest largely in newly imported or originated stock. They are not certain that the flowers will "take" and become fashionable; if they do not, they lose heavily.

CAMELLIAS.

The revival of Camellias is a marked feature of the latest floral fashions. For many years these beautiful, but ordorless, blossoms have been antiquated, and rarely used. With the advance of English ideas in decoration in the metropolis, the Camellia has worked its way into high fame, especially when elaborate ornamentation with flowers and foliage is made in large apartments.

At one of the large balls given at Delmonico's lately, several English guests of nobility were entertained, and in their honor the Camellias were used profusely. The walls were frescoed with them, there were shields of them on the music balconies, and mirror frames were enameled with *C. Donckelari*, which is a crimson and white variety.

When the rage for large Roses started in New York a considerable number of Camellia plants were thrown out of greenhouses to make room for their rivals. For that reason the flower is not very plentiful, only a few growers having preserved their best specimens. The kinds most in use are *alba plena*, a double white; Albertus, white pencilled with pink; Caleb Cope, a blush color; Chalmer's Perfection, a bright pink; *elata*, dark crimson; *fimbriata*, white exquisitely fringed; *imbricata*, a deep carmine; and *Florida*, a cherry and white mottled.

Large hand bouquets of Camellias are extremely fashionable; these always have a cluster of fragrant flowers fastened to the stems to give the bunch odor. A bouquet made of pure white *C. fimbriata*, had a cluster of white Violets tied with a white satin sash to the stem; it was the first Camellia bouquet carried in this city for a decade, among fashionable circles.

GOLDEN WEDDING FLOWERS.

Acacia pubescens is used with splendid effect in room decoration. For a golden wedding celebration lately, where only yellow flowers were placed in the drawing room, *Acacia pubescens*, made a superb show. There were panels of Canary Bird Tulips on the walls and the mantels were banked with Narcissus, Trumpet Major and Perle des Jardin Roses. A fringing of *Mahernia odorata* drooped nearly to the fire-places, which were filled with specimens of this old-fashioned, but dainty, and highly perfumed plant.

BOUGAINVILLEA.

Bougainvillea spectabilis is always esteemed a novelty for decoration by leading florists who will buy every branch of it that is offered. Its color is so dazzling that it must be handled with discretion as it will destroy the effect of nearly every other flower placed in combination. At a recent reception, the parlors and corridors were garlanded with *Bougainvillea spectabilis* which was held where the festoons were looped by branches of *Lilium longiflorum* and cream colored satin rosettes.

SMILAX AND IVY.

Smilax is no longer the fashionable foliage. It became so common in markets and restaurants, and was used so freely in cheap decorations that those who lead the fashion in flowers will not have a string of it in their decorations.

Ivy leaves are now the staple foliage. They are used in garlands, and with Roses in all positions, when any beside their own foliage is demanded. A cluster of Ivy leaves is tied on the stems of all bouquets, their language "Friendship" making them favorites. What is known as Heidelberg Ivy, the leaves of which are thickly veined and often of ruddy color, is made into fringings for Rose and Violet designs. Table scarfs of Ivy are a spring novelty for luncheons. They are made the same shape as plush table scarfs, being wider at the ends. Ivy leaves are sewed on to dark green silesia thickly and the ends are fringed with sprays of the young foliage or Lily of the Valley. After placing the scarf over the table, clusters of Violets, Lilies, or Daffodils are laid on the bed of polished leaves.

BOUQUETS.

Bouquet making is now one of the fine arts with the florist. The custom of sending a bouquet to the hostess on the evening of her entertainment, and of ordering this from her florist, who strives to make each one different, has started the energies of those in this department of flower weaving.

A florists lately made forty bouquets for a lady who gave a cotillion. They were every one made in perfect taste; one was composed of five hundred sprays of Lily of the Valley. In one side were perched three Japanese sparrows—pure white little birds with pink bills—stuffed. The bunch was bound at the stems with white satin ribbon, on which was stamped with gold the lady's name, and a large frond of *Adiantum Farleyense*. Stuffed birds are frequently placed in bouquets, only humming birds and Japanese sparrows, however. The latter cost five dollars each, adding considerably to the expense of the bunch.

Bouquets of La France Roses and pale Lilacs are very handsome. Jacqueminots are combined with Mignonette, and Catherine Mermet bunches are sprinkled with Lily of the Valley. Cornelia Cook Roses have superseded Niphetos in bridal bunches. The Cooks are grand in size and exquisite in tint and foliage this spring. A spray of Orange blossoms is fastened in one side.

Natural flowers are again used for ornamenting gowns and the coiffure. Camellias have been placed upon satin skirts to hold lace drapery and are handsome additions.

The little *Polyantha* Rose "Mignonette" is in lively demand for trimming children's frocks. A little girl wore a dress of pink silk tulle, the skirt drapery being caught with Mignonette Roses. She wore a wreath of the same flower. These tiny blush Roses are very scarce, few of them being forced this season by plantsmen.

Pink and blue Larkspur are among the spring novelties besides single Poppies, Sweet Pea, and Bluets. The latter fringy Corn Flowers are snatched up at any price as soon as displayed by the florist.

FLORA.

PRUNING SHRUBS.

Shrubbery which has just been devastated by the shears of the amateur trimmer, tersely remarks a correspondent of the Philadelphia Press, calls forth a good deal of commiseration at this season. When the mania for cutting seizes the owner of uneducated shears he begins to set them at work to reduce every shrub to one form. The tops may all be shorn off level, or they may be clipped into globes or all the branches shortened in to give length. The one unvarying rule of procedure is to treat every plant in exactly the same way, and inasmuch as every plant has individual peculiarities and all the species have verified habits of growth, and are used for different purposes, the cast-iron rule of uniformity is fatal. No universal law can be laid down, but for shrubs grown for their flowers there are a few simple directions which no one should neglect.

The shrubs which bloom early in the spring should, of course, never have their pruning in the autumn. The flower buds of such varieties are formed on the wood made during the summer, and when those branches are cut off there can be no bloom, for no buds are left to open. Early flowering spiræas, for example, like the *Spiræa Thunbergii*, have buds almost ready to open now. In the warm days of early December some of them did open. But they will pass safely through the winter and be ready to burst into bloom under the influence of the earliest genial spring days. Wait till after they have bloomed and then cut them sharply in. This will encourage the growth of new wood—just the wood which will bear flowers the following year, and the yield will be abundant.

Late blooming flowers appear upon the growth made during the same year. Such shrubs can be pruned very early in the spring. Take the *Hydrangea paniculata grandiflora*, for example. Cut back the wood of last year to a couple of eyes. Then, during the next summer cut out the weakest shoots, and the result in September will be immense blooms at the extremity of every strong branch. The Late Flowering Tamarisk which, by the way, is much better than the other one in ordinary cultivation which flowers in June, when cut back on this plan makes amazing growth, and with waving plumes of the most delicate form and color.

But shrubs are not grown for flowers alone, and the time and method of pruning must be varied to suit the purpose intended. Study the habit of each shrub, and never lift the knife against one until you can give an intelligent reason for so doing. Consider the wild shrubs of the field. Many of them are invested with a rare charm, and yet no fussy gardener has ever "trimmed them into shape."

BOOK NOTICES.

Tillage is Manure, is the title of an interesting little pamphlet on this important subject, by the veteran John J. Thomas of the Country Gentleman, and published by Nash & Brother of Millington, N. J., and sent free by them "to those mentioning their advertisement." Mr. Thomas writes convincingly and well, as he usually does, and after reading his essay, one is apt to till the land more thoroughly. Mr. Henry Stewart also has an interesting history of harrows in the same pamphlet, also essays on "Fall Plowing" and "Grass Culture." Although an advertising brochure it is well worth sending for.

The Canadian Horticulturist of St. Catharines, Ont., dispenses good cheer in fruit and flower lore to a great circle of intelligent horticulturists in a climate where sound doctrine is especially necessary to success. Mr. Beadle is well fitted for his double work of editor, and secretary of the Fruit Growers' Association.

FRIENDLY WORDS.

The American Garden is ably edited by Dr. F. M. Hexamer, one of the most scientific and thoroughly practical gardeners and horticulturists, both by the pen and spade, in America. It fairly sparkles and blooms in picturesque scenes and natural pictures of plants, flowers, and fruits. No one can carefully read such a monthly journal for a year without receiving practical knowledge worth ten times more than the dollar it costs.—*Jersey Bulletin.*

Send me two copies of the American Garden for 1885. It is an excellent paper, and I hope it will give you as good satisfaction as it does to your subscribers.—*J. G. C., Brisbane, Queensland.*

This gem of a horticultural monthly has recently changed hands. Dr. F. M. Hexamer, the best authority of the day on gardening, broadly, whether for profit or pleasure, retained as editor, in connection with Mr. Libby, the publisher, who has had valuable journalistic, agricultural and horticultural experience, in connection with the Scientific Farmer, the American Agriculturist, Land and Home, and Chicago Farmers' Review. Mr. Libby has a rich field before him in his new enterprise, and with his proverbial industry, energy and perseverance, will labor earnestly to bring forth rich and abundant crops. Every one who has a garden, however large or small, will find valuable information in each number of the American Garden worth more than the one dollar subscription price for a year.—*Berkshire Courier.*

CATALOGUES.

Plant Seed Co., St. Louis, Mo., takes its name from Mr. Alfred Plant and his predecessors of the same name, of good old Connecticut valley stock. Another instance of appropriateness of a man's name to his work. They issue a fine catalogue.

Southern Seed Co., Macon, Ga. A new concern which undertakes to introduce southern grown seed of many varieties for southern planting. Their catalogue comprises all the standard varieties adapted to that section.

Evart H. Scott, Ann Arbor, Mich. Price-list of small fruits. His specialty is the Woodruff Red Grape.

John Lewis Childs, Floral, Queens Co., N. Y., as usual sends out a complete and attractive catalogue of "new, rare and beautiful flowers." His growing trade is evidenced by the fact that the government authorities have established a post-office for him under the name of "Floral."

T. S. Hubbard, Fredonia, N. Y. Mr. Hubbard might claim the championship belt as "pusher of Grapes." He makes a specialty of this, the queen of fruits, and enjoys a large trade. His catalogue contains a great list.

Geo. W. Campbell, Delaware O., makes a specialty of the Lady Grape, but is this year also pushing the Empire State. He has a great collection of Grape and other small fruit plants.

R. & J. Farquhar & Co., Boston, is a firm of young seedsmen who seem to be winning the confidence of gardeners and florists. They issue a good catalogue.

John Saul, Washington, D. C., is well-known as possessing one of the largest collection of ornamental plants in America, and his catalogue is almost a gazetteer of the species in cultivation.

Henry K. Simons, Greenfield, Mass., is an "intensive" gardener, as well as working bank officer. He grows a perfect host of plants on a quarter acre of ground, and issues a compact catalogue of flowers, seeds and plants.

Albert Benz, Douglaston, N. Y., is an expert grower of Pansy seed, one of the very few successful flower seed growers in America, and sends free to applicants a practical essay on Pansies.

Michael Plant & Seed Co., St. Louis, Mo., issue a large catalogue of plants and seeds.

A. Brackenridge, Govanstown, Md., makes a specialty of Orchids and offers a most tempting list of these rarest of plants.

J. Bolgiano, Baltimore, catalogue of garden, farm and flower seeds.

H. S. Anderson, Union Springs, N. Y., sends out a descriptive catalogue of small fruits and offers all the leading varieties.

Henry A. Dreer, Philadelphia, is the young manager of an old and reliable house, and sends out one of the largest seed and plant catalogues in the trade.

H. G. Corney, Cornwall-on-Hudson, N. Y., is the intelligent successor of E. P. Roe, the popular novelist nurseryman, and is making a worthy effort to keep up the well-earned reputation of his goods.

A. J. Caywood & Son, Marlboro, N. Y., are the originators of the Marlboro Raspberry, Poughkeepsie Red and Ulster Prolific Grapes and Minnewhaski Blackberry, which are highly commended by many cultivators.

W. H. Smith, Philadelphia, has a very full catalogue of seeds, plants, implements, etc.

W. H. Maule, Philadelphia, has several specialties in melons, and offers $200 in cash prizes.

David Ferguson & Sons, Philadelphia. Select catalogue of greenhouse, hothouse and hardy plants and new plants of recent introduction.

Delos Staples, West Sebewa, Mich., has undertaken the unique business of introducing to cultivation the wild blueberry, with considerable success, and offers the plants for sale.

Samuel C. Moon, Morrisville, Pa. Descriptive catalogue of ornamental trees and plants, fruit trees, small fruits, etc., with instructions for culture.

Bloomington Nursery Co. Bloomington, Ill. Wholesale catalogue of trees, plants, shrubs, roses, bulbs, etc., comprising over several millions of fruit and forest trees and plants.

A. E. Spaulding, Ainsworth, Ia., lost heavily by fire last year, but now issues a neat catalogue of seeds, plants, bulbs, tools, etc

Edwin Van Allen, Bethlehem Centre, N. Y. Annual price-list of choice small fruit plants, vines, etc., mostly grown by himself.

Frank Ford & Son, Ravenna, O., catalogue of small fruit plants, sound vegetable seeds, seed Potatoes, Grape vines, etc.

Edward Gillette, Southwick, Mass., makes a specialty of our native perennial plants, including Orchids, Shrubs, Climbers, and Alpine, aquatic and bog plants, rare Ferns, etc., for cultivation in the garden. A unique industry under a true love of nature.

J. W. Hall, Marion Station, Md. Descriptive catalogue and price-list of choice small fruit plants, trees, grape vines, etc., grown at the Somerset Fruit Farm and Nursery.

Irving Allen, Springfield, Mass. A compact illustrated catalogue of small fruit plants, fruit trees, etc.

Aaron Low, Essex, Mass. Catalogue of garden, field and flower seeds, including many "novelties."

John Perkins, Moorestown, N. J. Catalogue of hardy fruit trees, vines and plants, from the Fairview Nurseries, which comprise 200 acres or more.

Schlegel & Fottler, Boston. Fottler's Brunwick Cabbage originated with Mr. Fottler's father, and is still pushed by the son and his partner. A full catalogue.

George H. Colvin, Dalton, Pa. Catalogue of seeds, plants, and small fruit plants, for the farm, field and garden.

John R. & A. Murdoch, Pittsburgh, Pa. Established 1840. Spring catalogue of seeds, trees, plants and tools. A full list.

George S. Wales, Rochester, N. Y. A good catalogue of fruits and flowers, from a reliable nurseryman, as we believe all are that advertise in the American Garden.

F. L. Wright, Plainfield, Mich. Price-list of Grape vines and small fruit plants, "grown in a northern climate."

C. E. Allen, Brattleboro, Vt. Catalogue of northern grown flowers and vegetable seeds and plants.

E. D. Putney, Brentwood, N. Y., sends free a concise essay on Strawberry culture.

Edwin Allen, New Brunswick, N. J. Price-list of fruit, forest and ornamental trees and plants.

D. R. Woods & Co., New Brighton, Pa. Illustrated catalogue of Roses and other flowering and ornamental plants.

George L. Miller, Stockton, O. Descriptive catalogue of Strawberries, Raspberries, Blackberries, Grapes, etc., and green-house and bedding plants, from the Ridgewood Fruit Farm and Nurseries.

Bowker Fertilizer Co., Boston and New York, issue two interesting and valuable pamphlets. They give many reports of experience by farmers and gardeners who have used these manures.

H. J. Baker & Brother, New York. "Facts for farmers, regarding the use and results of fertilizers."

V. H. Hallock, Son & Thorpe, Queens, N. Y., may well be proud of the 180 premiums won by them for displays of plants and flowers at the Horticultural shows in 1884. Their catalogue is a gem in its way, and that is a good way too. Mr. Thorpe opens it with a readable and practical essay on "The Chrysanthemum, the Queen of Autumn." Its cover is artistic, tasteful and handsome.

Invite your friends to take a seat in our Garden. That is, get them to join our circle for three months and take home with them a Marlboro Raspberry Plant. *See offer on page 63.*

Down with the needless fences.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

Jos. Breck & Son of Boston report trade opening briskly in seeds.

Black Mexican Corn seed seems to be scarce among the seedsmen.

Seedsmen report that Lima Bean seed is more uniform than usual, and of excellent quality.

Parker & Wood of Boston have made some important improvements in their store, so that now it is light, roomy and convenient.

Messrs. Peter Henderson & Co., have doubled the size of their stores in New York in order to increase their great and growing trade.

The Niagara Grape and the Marlboro Raspberry ought to have a great sale this year as nearly all the nurserymen are advertising them liberally.

Mr. Chas. A. Green of Rochester, N. Y., reports a larger number of orders for his publications and for nursery stock than ever before received since he began the business.

Mr. Wm. Henry Maule, who has for some time past been the only member of the firm of Benson, Maule & Co., Philadelphia, has changed the firm name to Wm. H. Maule.

Johnson & Stokes of Philadelphia are fitting up a fine new store at 219 Market street. It is five stories high and contains five times as much room as their present quarters.

We get greetings and endorsements from the horticultural trades in every direction, for the improvement in The American Garden, and the impartial manner in which it is conducted.

At the auction sale of the stock of the late firm of Messrs. B. K. Bliss & Sons, the register of names, lease, fixtures and catalogue plates, i. e. the "good will," were purchased by Messrs. Peter Henderson & Co.

Our friend Chas. V. Mapes of the Mapes Fertilizer Co., of New York, is a progressive thinker, heartily in earnest in the development of intensive farming, and one of the shrewdest advertisers in the trade.

We went over the stores of W. Atlee Burpee & Co., in Philadelphia, the other day, and must say that we never saw more complete and perfect arrangements for the prompt, accurate and economical filling of orders.

Prices of seeds have not been lower than now since the seed trade was conducted on the honorable basis it now occupies for the most part. Never before could good and true seeds of all kinds be bought so low as now.

A. D. Cowan & Co., of New York, whose advertisement of Peas last month was cut in two by an unruly rule in the hands of a beruled printer, state that they have a very superior stock of the varieties they advertise.

The Golden Gem Melon has become very popular with the Philadelphia market gardeners—it having largely taken the place of the Jenny Lind for early marketing. We tried it when first introduced and found it of extra fine quality.

Mr. A. Brackenridge of Govanstown, Md., well known as a leading commercial florist, has purchased over 7,000 plants from the exhibit of Guatemala at New Orleans. It comprises many rare and valuable plants from the tropics.

Messrs. Huvey & Co., of Boston will introduce Breese's Advance Potato, which took first prize at the Massachusetts Horticultural Society's show in 1882 as the best new variety. We have tried this Potato and found it excellent in its form, quality and productiveness.

The bidding of western houses for eastern trade and of southern houses for northern trade as well as the reverse, shows a growing community of feeling between the different sections, and very pointedly marks the development of horticultural pursuits in the West and South.

The idea prevalent a few years ago that northern grown seeds of all species were best for both northern and southern sections, is refuted in part by the success of certain southern seed growers. They have shown that they can grow seeds of Pepper, Tomato, Egg Plant, Melon, etc., and many flower seeds, especially the seeds of many plants of semi-tropical origin, quite as well as their northern brethren. But whether earliness and quick maturity can as well be secured with southern grown seeds, even of southern species, is yet to be proven.

WE BRING GOOD LUCK

To all of The American Garden family of readers. Good fruit, good flowers, good vegetables, good gardens, good lawns, good health, good profits and good pleasure to all who read and act intelligently.

The Publisher's Corner.

THE AMERICAN GARDEN.

Subscription Terms.

To any address in United States and Canada, postpaid, one year, $1.00
Six months 60 cts., three months .30
To any foreign country in the Universal Postal Union and all British Colonies, postpaid, one year, $1.24
For $5.00 we send 6 copies one year.
For $7.50 we send 10 copies one year.
Subscriptions may begin at any time.
The magazine is not sent after subscription expires unless by special arrangement.

If you will send us a club of three month subscriptions during March, you may win an offer on this page of 100 Marlboro Raspberry Plants, or 4 Niagara Grape Vines.

MANY THANKS, KIND FRIENDS.

Those very-much-in-earnest friends of progressive Horticulture who have shown their interest by sending clubs of subscriptions for The American Garden, we have written down in our red-letter book of memory, with the check mark of Good Luck opposite their names, which we shall help them to by every means in our power.

THOSE SUBSCRIPTION BLANKS

Are not Duns.

Some subscription blanks got enclosed in a portion of our February edition by inadvertence, and sent to subscribers who had renewed their subscriptions, but which were intended only for those who had *not* already subscribed for 1885. Please pardon the oversight. If any reader who has received that blank will kindly pass it to some non-subscriber, it may help him to make up his mind to join our Good Luck family.

THIRTY-TWO PAGES.

Again a Rush.

Keen-sighted, wise, honorable, high-class advertisers of horticultural wares, seeking the attention of the intelligent and progressive Good Luck family of The American Garden readers, compels a still further increase in size, this time to thirty-two pages, or with the cover thirty-six pages. By this means we give our readers nearly twenty-three pages of valuable reading matter instead of the usual fourteen pages, and about twelve pages of as good and reliable a directory of dealers in farm and garden supplies as can be found anywhere.

We know that our readers, the friends of The American Garden and of American Horticulture, will rejoice with us in these signs of prosperity.

SUBSCRIPTIONS COME IN SLOWLY,

We are sorry to Confess.

But yet we feel sure of a positive increase in the number of The American Garden circle for 1885. We know that the great delays in western mails have effected our returns, and expect a little flood of orders when the blockade is raised.

The former publishers of The American Garden lost many thousand dollars on this publication, chiefly, we suppose, because of the apparent self-advertising motive of the enterprise at that time.

Now we believe our readers are anxious to promote the cause of horticulture and rural life, and that you will gladly speak a good word for our work to your friends, for their sake as well as ours.

Please note our offers on this page, by which we show our appreciation of any good words spoken and good work done for The American Garden.

CHOICE SEEDS FRUIT TREES AND PLANTS FOR ONLY THE AMERICAN GARDEN SUBSCRIBERS.

For Good Words Spoken in a Good Cause.

So general has been the response to our great seed and plant offer of last month, that we now extend the limit of time to 30 days longer. You see that we meet you *more* than half way! Now if you will just secure the subscriptions of one, two, or more, of your neighbors or friends we will send to you in return for your kindness:

Offer open for 30 days.

LIST 1.

For one *new* subscriber at $1.00 each, your choice of **$1.00 worth of seeds**, from the catalogue of *any* seedsman who advertises in the American Garden; except "special offers" of the dealers. Two subscriptions will give you $2.00 worth; five subscriptions $5.00 worth, and so on.

OR

For one *new* subscriber at $1.00, **one dozen** strong plants of the famous **Marlboro Raspberry**, (price $1 50 per doz.) Or a strong plant of the famous **Niagara White Grape** Or any **four** of the items mentioned under **List 2.**

For two *new* subscribers at $1.00 each. two strong plants of the **Niagara White Grape** (retail at $2.00 each). Or **two dozen** plants of the **Marlboro Raspberry.** Or any **ten** of the items mentioned under **List 2.**

OR

You can take your choice of any of the presents offered in **List 3.**

This offer is **ONLY FOR OUR SUBSCRIBERS,** but,

Any person not a subscriber who wishes to take advantage of the above liberal offers has only to *add* his or her own name to the number required, and select a present for himself from **List 2.**

Every new subscriber at $1.00 has the privilege of our seed and plant offers in **List 2.**

This offer is necessarily limited to 30 days from date of receiving this number of the magazine by our subscribers.

How to Get the Seeds. Send to a seedsman for his catalogue. Select the seeds wanted. Get subscriptions enough among your neighbors to equal the amount of seeds wanted. Then send us the list of seeds and the subscriptions. We will order the seeds from the seedsman sent direct to you, and and pay for them ourselves, and enter the subscriptions on our books.

FOR A TRIAL TRIP.

WE WILL GIVE

100 *Marlboro Raspberry Plants*

To the person (a subscriber) who will send us, during March, the largest number of *three-month* subscribers to the American Garden at 30 cents each, every one of the subscribers also to have a Marlboro Raspberry plant, (the lowest retail price of which is 35 cents). Don't YOU want to get a plantation of this now famous Raspberry, and get one also for each of your neighbors, and help The American Garden at same time?

For the second largest club of three-month subscribers, as above, we will give four strong 2-years-old Niagara White Grape vines and a Marlboro Raspberry plant to each subscriber in the club. Don't YOU want to start a vineyard of this valuable grape?

THE PLANT AND SEED PREMIUMS.

Will be sent in due time for use.

The plants in spring after danger of frost is past, unless otherwise ordered, and the seeds in ample season for planting at their proper dates. This is in answer to many questions.

FIVE YEAR SUBSCRIPTIONS.

Any person who desires to try the Marlboro Raspberry, or the Niagara Grape, can get *three dozen* strong Marlboro plants (the lowest retail price of which is $1.50 per dozen), or two strong 2-year plants of the Niagara, by sending a five year's subscription to The American Garden, and $5.00. In the one case he gets the magazine for five years for only 50 cents, and in the other for only $1.00. On this offer the subscription of any present subscriber would simply be extended for five years.

THE NIAGARA WHITE GRAPE AND THE MARLBORO RASPBERRY.

Our unequalled offers of these famous new fruits are this month more liberal than ever by reason of the recent reduction in price of the Marlboro Raspberry by the parties controlling its sale.

Just think of it! A $2.00 Niagara Grape vine, No. 1 in quality, under seal of the Niagara White Grape Co., in return for only the few words required to get *one* new subscription from a neighbor for The American Garden!

Or *one dozen* strong plants of the Marlboro Raspberry direct from the originator for only *one* new subscription!

Please read the offers, and then please treat yourself to these valuable plants.

CHINESE YAM.

Many people would like to try this very old but little known, though much written of vegetable. Dr. Hexamer, the editor, grew a few of them last year which he wishes to distribute among The American Garden family. We therefore offer to any one who will send us a subscription (at $1.00) other than his own, 50 good bulblets of the Chinese Yam, sent postpaid; or 200 for 3 subscriptions. (Cost at retail $1.50 per 100.)

The American Garden three months and a Marlboro Raspberry for 30 cents.

The American Garden will be sent to your friend for three months, and also a plant of the Marlboro Raspberry for only 30 cents.

TO STRANGERS
AND CHANCE ACQUAINTANCES
OF
THE AMERICAN GARDEN.

Several thousands of you will receive this number of The American Garden as a compliment to your interest in horticulture. Please examine it carefully. * * * (Pause for examination.) * * * Now how do you like it? Is it worth $1.00 a year to you? Isn't there $1.00 worth in this one number?

"Yes?"

Then of course you want to subscribe for a year. You have only to enclose a dollar bill (It is quite safe in the mails now), select a present of seeds or plants (worth 25 cents to $5.00) from **List 2** on page 63, write your name and send us the order. The seeds will be sent at once, the plants in spring unless wanted now, and The American Garden every month in the year.

And you will get many times you money's worth, and be helping to promote the cause of good fruits, nice vegetables, beautiful flowers and rural improvement, by supporting the only independent, popular, special journal of horticulture in America.

Presents to every Subscriber.

Though we do not believe in premiums given to induce people to pay a dollar for a periodical worth many times that amount, yet in the present competition among publishers we are impelled to offer these inducements in order to get people acquainted with a magazine which they are likely to stick by for many years thereafter.

LIST 2.

A PRESENT TO EVERY SUBSCRIBER TO

The American Garden

We will send free, postpaid, to every subscriber at $1.00 his choice of one of the following lots:

SEEDS.

No. 1. *Wild Garden Seeds:* half-ounce packet of 100 varieties choice flower seeds; cost $5.00 in single packets.
No. 2. *Pansy, Perfection:* splendid, large, vigorous.
No. 3. *Single Dahlias:* seeds of 100 choice varieties.
No. 4. *Hollyhock:* choice double mixed.
No. 5. *Balsam, White Perfection:* large, pure white, Camellia formed, good for pot culture.
No. 6. *Everlasting Flowers:* seeds of 12 distinct sorts.
No. 7. *Ornamental Grasses:* seeds of 12 best varieties.
No. 8. *Pea, Bliss's Ever Bearing:* 1 packet; new, very prolific, excellent quality.
No. 9. *Pea, Bliss's Abundance:* 1 packet; new, early, dwarf, very fine.
No. 10. *Chou de Berghley:* 1 packet; new vegetable here, hardy.
No. 11. *Onion, Giant Zittau:* 1 packet; from Europe, handsome, enormous size, pleasant flavor.
No. 12. *Water Melon, American Champion:* 1 packet; highly recommended.
No. 13. *Potato, Dakota Red:* 1 tuber; a promising new sort; late; very prolific: of high quality.
No. 13A. *Marlboro Raspberry:* 1 strong plant of this famous new sort: from the originator.
No. 13B. *Parry Strawberry:* 3 plants; new; very large, beautiful, high quality, perfect flower. (Price $2.50 per dozen).

PLANTS AND BULBS.

No. 14. *Triloma uvaria* (Red Hot Poker Plant, or Flame Plant): one of the best hardy plants.
No. 15. *Calla Æthiopica* (Lily of the Nile): a strong root of this stately plant.
No. 16. *Clematis crispa:* beautiful, new, flowers 1 to 1½ inches across, lavender blue and white, delicious perfume.
No. 17. *Tigridia grandiflora alba* (New white Tigridia): a splendid acquisition.
No. 18. *Lily of the Valley:* 6 flowering crowns of these dainty plants.
No. 19. *Clematis coccinea* (Scarlet Clematis): grows 8 to 10 feet in one season, coral red flowers.
No. 20. Choice of 50 cents' worth of seeds in packets from the catalogue of *any* seedsman advertising in The American Garden.

PREMIUMS.

TO THOSE SENDING SUBSCRIPTIONS TO

THE AMERICAN GARDEN.

We offer a choice from any of the following valuable articles to all who will send the number of subscriptions named with each article. Everything described is **first-class** in every way, and **can be fully relied upon**. Great care has been exercised to offer none but the *best* and none but those possessing **great merit.**

Almost any one can in a few hours gather names enough to get some valuable needed article **Without Expense.**

Remember, that Every Subscriber in the clubs will receive one of the valuable presents of seeds and plants *above* enumerated, if asked for when the subscriptions are sent. Address all orders to

E. H. LIBBY,

New York, or Greenfield, Mass.

LIST 3.

Greatly Reduced Rates for 30 Days.

If you are a subscriber, see list 1 on page 63.

A. Niagara White Grape: We will give a strong plant of this famous new white grape, unquestionably the finest white grape for general purposes yet produced, for only 2 subscriptions at $1.00 each. Sent by mail prepaid.

For 5 subscriptions at $1.00 each, we will send 3 strong plants. (Lowest retail price, $2.00 each.)

B. Marlboro Raspberry: The largest early raspberry; new; superior as a market berry; now creating much interest among fruit growers. For 4 subscriptions at $1.00 each, we will send 48 strong plants; for 8 subscriptions, 100 plants.

C. Novelty Collection No. 1. All for 10 subscriptions at $1.00 each. (Regular price $18.00.)
One doz. *Marlboro*, the largest early raspberry.
One doz. *Hansell*, earliest and best of all raspberries.
One doz. *Wilson, Jr.*, the largest early blackberry.
One doz. *Lucretia Dewberry*, large, early, hardy, prolific.
One doz. *Early Harvest* earliest of all blackberries.
One doz. *Centennial Black Cap*, large, early, luscious.
One doz. *Cornelia*, the best late strawberry.
One doz. *Parry*, the best of all strawberries.
One two-year *Niagara*, best of all white grapes.
One two-year *Jessica*, best of all early grapes.
Sent by express, or free by mail for a club of 12 subscribers.

D. Novelty Collection No. 2. All for 7 subscriptions at $1.00 each. (Regular price $10.00).
One doz. *Marlboro Raspberry.*
One doz. *Early Harvest Blackberry.*
Half doz. *Wilson Jr. Blackberry.*
One doz. *Parry Strawberry.*
Half doz. *Cornelia Strawberry.*
One *Niagara Grape*, two years.
Sent by express; or free by mail for a club of 9 subscribers.

E. Nut Tree Collection: All for 6 subscriptions at $1.00 each. (Regular price $5.00).
One *Japan Chestnut*, 3 to 4 ft.
One *Spanish Chestnut*, 3 to 4 ft.
One *English Filbert*, 2 to 3 ft.
One *Kentish Cob Filbert*, 2 to 3 ft.
One *English Walnut*, 3 to 4 ft.
One *Dwarf English Walnut*, 2½ ft.
One *Pecan Nut*, 2 to 3 ft.
One *Shellbark*, 3 to 4 ft.
One *Soft Shell Almond*, 4 to 5 ft.
One *Hard Shell Almond*, 4 to 5 ft.
Sent by express only.

F. "How the Farm Pays." Price, $2.50. The valuable new book by Peter Henderson & William Crozier, on the best methods of profitable gardening and farming, as proven by the experience of these successful men. Free by mail for 4 subscriptions at $1.00 each.

G. Any Books Published in the United States, to the amount of $5.00 will be sent, by express, for 9 subscriptions at $1.00 each; free by mail for 11 subscriptions.

H. Little Detective Scales. (Price, $3.00.) Strong, accurate scales (not cheap and imperfect balances or steel-yards) to weigh anything from ¼ ounce to 25 pounds. Just the thing for the kitchen. Sent by express for 5 subscriptions at $1.00 each.

I. The World's Cyclopedia and Library of Universal knowledge. See description on adjoining page. Free by mail for 2 subscriptions at $1.00 each.

J. The Perfect Stylographic Pen. (Price, $1.) A perfect pen of this class within everybody's reach. Same material and same quality as the higher priced pens. Will last for years. Contains ink enough to write 15,000 words. Used with ordinary ink. *Every pen warranted.* Free by mail for 2 subscriptions at $1.00 each.

M. The Farm Library. Six handy little manuals, by the best writers: *No. 1, Flowers in Winter; No. 2, The Flower Garden; No. 3, The Flower Garden, (on shrubby plants); No. 4, The Vegetable Garden: No. 5, Luscious Fruits; No. 6, The A. 1. Poultry Book.* All for 2 subscriptions at $1.00 each.

Address all orders to E. H. Libby,
New York, or Greenfield, Mass.

ARE YOU READING ANYTHING?

"The American Garden" in Club with Other Publications.

If you want any of the following leading publications for 1885, we will send them in club with American Garden for the prices named in the last column. This offer is good for both new and old subscribers. *And all club subscribers are also entitled to the seed and plant premiums offered to each subscriber under* **List 2** *on this page.*

A. *Publisher's price for both.*

B. *Our price for both, including seed premiums of The American Garden.*

	A.	B.
American Agriculturist	$2.50	$2.00
Arthur's Home Magazine	3.00	2.40
Atlantic Monthly	5.00	4.25
Babyland, for youngest readers	1.50	1.25
Builder (for home builders)	5.00	2.00
Century Magazine	3.00	4.50
Christian Union (best of the great weeklies)	4.00	3.00
" " renewals	4.00	3.50
Country Gentleman	3.50	3.00
Demorest's Magazine	3.00	2.60
Farm and Garden	1.50	1.25
Farm Journal	1.50	1.25
Farmer's Review	2.50	2.00
Floral Cabinet	2.25	2.00
Gardener's Monthly	3.10	2.50
Godey's Lady's Book	3.00	2.60
Green's Fruit Grower, and new book on "How to propagate and Grow Fruit."	2.00	1.20
Harper's Weekly	5.00	4.25
" Bazar	5.00	4.25
" Monthly	5.00	4.00
" Young People	3.00	2.60
Inter-Ocean (weekly)	2.00	1.75
New England Farmer	3.50	3.00
Our Little Ones and Nursery	2.50	2.25
Outing	3.00	2.65
Peterson's Magazine	3.00	2.65
Poultry World	2.25	1.75
Rural New-Yorker, with its seed distribution	3.00	2.60
St. Nicholas	4.00	3.50
Texas Siftings	3.50	2.90
Sun, New-York, weekly	2.00	1.90
Tribune, New-York, weekly	2.00	1.90
Vick's Magazine	2.25	1.75
Youth's Companion (renewals)	2.85	2.75
Youth's Companion, new subscription	2.75	2.25
Wallace's Monthly	4.00	3.65
Western Rural	2.65	2.50
Western World, and sectional map of any state	2.25	1.85
Wide Awake	4.00	3.00
FOREIGN PUBLICATIONS. All postage paid.		
Agricultural Gazette	6.50	6.00
Gardener's Chronicle	7.50	7.00
Gardening Illustrated	3.15	2.80
The Garden	7.00	6.25
Journal d'Agriculture Pratique	7.00	6.50

If you want more than one of the above or any other publications in club with The American Garden, we will give prices on application. Address,

E. H. Libby,
New York, or Greenfield, Mass.

EARLY ARLINGTON CELERY.

This new celery described on page 48, is said to be an improvement on the Boston market in earliness and hardiness. We are enabled by the only grower of the seed to offer a 25 cent packet to any person who will send us one 6-months subscription (at 50 cents), or three packets (value 75 cents) for only one yearly subscription at $1.00.

FRUIT FACTS AT FINE FIGURES.

Mr. Chas. A. Green, that pleasing writer on fruit culture, has produced a remarkably sprightly and valuable book on "How to Propagate and Grow Fruit." Mr. Green also edits that bright and interesting quarterly, Green's Fruit Grower. The price of the book is 50 cts.; of the Fruit Grower 50 cts. We send the book, the *Fruit Grower* and The American Garden, all for $1.20.

"HOW THE FARM PAYS."

In our general 30-days reduction for clubs we offer to send this new book to any one sending us only 3 subscriptions at $1.00 each. The retail price of book is $2.50. See review in December number.

Please notice the offers of Marlboro Raspberries and Niagara White Grapes for three-month subscriptions on page 63.

FRIENDLY WORDS.

With no more information and experience than I obtained from its pages I have met with highly satisfactory success in raising flowers.—*W. F., Brooklyn, N. Y.*

I find it invaluable; go on in the good work. It should be in every home.—*B. F. O., Mountain View, N. J.*

I admire the AMERICAN GARDEN greatly, and should feel much disappointed to miss a single number.—*Dr. T. H. Hoskins, Vt.*

I like the paper exceedingly.—*H. R. A., Fort Fetterman, Wyoming Ter.*

Since I have followed its advice I have met with success generally.—*J. M. H., Squiresville, Ky.*

I find it full of instruction, and its reading eminently pleasurable and elevating.—*E. P., Sanford, Fla.*

I am much pleased with the AMERICAN GARDEN, and am certain I can get ten or more subscribers for it here.—*A. C. B., Dunedin, New Zealand.*

I cannot be a single month without the AMERICAN GARDEN. I like it more and more the oftener I read it.—*S. G. M., Wylliesburg, Va.*

I have been much interested in the AMERICAN GARDEN and have no reason to fear deterioration from its change of ownership.—*S. W. S., U. S. Treasury Dep., Washington. Dear Hexamer:*

Has been a valuable coadjuter in the cause of horticultural progress, and we wish it a long-continued success.—*Gardeners' Monthly.*

The AMERICAN GARDEN was *good* when you first took hold of it—it has grown *better* ever since; it will now positively be *best*. In brief I know, with you and Mr. Libby hitched up in double harness, the AMERICAN GARDEN will rush through the land as the chariots of old, and all will stand and behold with amazement.—*Jno. T. Lovett, Little Silver, N. J.*

I am fully persuaded that if its literary standard and general get up is maintained, that it shall make considerable headway amongst a certain class who formerly looked upon it as being to a great extent published in the interest of furthering the business of the former publishers.—*Mansfield Milton.*

For those interested in floriculture and horticulture there are few if any, more valuable publications than the AMERICAN GARDEN. It is handsomely printed and carefully edited.—*North and South.*

Among the horticultural monthlies that come to us, there is none welcomed with more pleasure than the AMERICAN GARDEN. The farmer will find in each number something that he can profit by, while to the professional and amateur gardener it is simply indispensable.—*Iowa Churchman.*

Has done effective work in the cause of advanced horticulture. It gives promise of becoming still more worthy the support of those who love nice fruits, beautiful flowers, healthful vegetables and pleasant homes.—*Forest, Forge and Farm.*

A conspicuous success.—*New England Homestead.*

SAM GREEN MAKES A RESOLUTION.

While Sam Green weeded, and dug, and hoed,
But had no luck with the seeds he sowed,
His friend, Jim Browning, across the fence,
Was glad at sight of his crops immense.
Glad, yet sorry, was Jim in his heart,
That his neighbor, Green, should stand apart,
With envy gnawing beneath his ribs,
When he thought of big Jim's bursting cribs;
Of all good things which seemed to have flown
Over to Jim's place, out of his own.

"Now, Sam," said Browning, "I tell you what,
I'm a going to lose more'n half I've got,
Unless you borrow what there's to spare;
So, fetch your teams, and draw home your share.
I haint forgotten ten years ago,
When wife and I, in the great big blow,
Lost all we had but the bare red land,
And you were the only friend at hand;
As you dealt by me in that day of need,
Let me deal by you, old friend, indeed!"

Then Sam was softened. He said, "O, Jim,
It isn't because my crops are slim
I envy you, but because you stick,
Year in, year out, to your favorite VICK;
While I, like a fool, now here, now there,
Buy seeds, and am cheated everywhere."
"Almost," said Jim, with a great, broad smile
On his homely face. But Sam said, "I'll
Buy no seeds, never, of none but VICK;
There's no use talking, I am just sick!"

ROCHESTER, N. Y.

If in want of Seeds, send 10 cents for Vick's Floral Guide, and deduct this amount from first order sent for seed, JAMES VICK, Rochester, N. Y.

The Three Best Peas
For Successional Crop.
Warranted Original Headquarters Seed.

BLISS'S EVERBEARING PEA.

Bliss's American Wonder. The earliest, dwarfest and sweetest. Pkt. 10c., qt., 40c.; by mail 65c.
Bliss's Abundance. One of the most productive and richest marrow. Pkt., 10c., qt., 75c.; by mail $1.00.
Bliss's Everbearing. This fine general crop pea continues longer in bearing than any other, retaining its delicious tenderness until the last picking. Per pkt., 10c.; qt., 75c.; by mail $1.00

Special Inducements to Readers of this Paper.

We will send by mail postage-paid, one quart each of the above three new varieties of peas upon receipt of $2.50 in postage stamps, or money order; and in addition allow each purchaser to select Flower Seeds from our illustrated catalogue to the value of $1.00. This substantial offer is made with the view of introducing ourselves to the readers of this valuable horticultural journal, and at the request of its new manager. As it only stands good until our stocks are sold the necessity for taking early advantage of it is apparent. Our catalogue containing "only the best seeds" for farm and garden will be mailed free to all applicants.

A. D. COWAN & CO.,
P. O. Box 2541. **114 Chambers St., N. Y.**

The houses of A. D. Cowan & Co., and W. H. Carson & Co. having been recently consolidated, the managing staff consists only of practical seedsmen, and comprises the following well known names:
A. D. Cowan, formerly with B. K. Bliss & Sons, N. Y. W. H. Carson, formerly of P. Henderson & Co., and Thorburn & Carson, N. Y. Chas. G. Weeber, formerly with Jas. Fleming N. Y. T. V. W. Bergen, seed grower, Bay Ridge, L. I.

POULTRY
FOR PRACTICAL FARMERS.
The BEST FOR EGGS AND THE TABLE.
Thoroughbred PLYMOUTH ROCKS, PARTRIDGE COCHINS: BLACK LEGHORNS, DARK BRAHMAS, and WYANDOTTES, EGGS, $2 per 13.
Also, the favorite Fancy Breeds.
Mammoth WHITE TURKEY Eggs, $3 per 9; WHITE PEKIN DUCK Eggs, $2 per 11; EMBDEN GOOSE Eggs, 50 cents each.
THOMAS W. LUDLOW, Yonkers, N. Y.

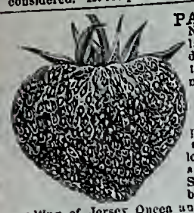
GRAPE VINES OF OVER 100 kinds.
Nursery established 28 yrs. Delaware, Concord, Lady, Empire State, Niagara, Vergennes, Hayes, Early Victor, Lady and all the best, new and old varieties. Splendid stock. Prices low. Catalogues free.
GEORGE W. CAMPBELL, Delaware, O.

15 Pkts. of new and fresh vegetable seeds for 25 cts. also our catalogue. VIC. KEEN & CO., Box 1254, PHILADELPHIA, PA.

LOVETT'S Bouquet Collection of BEAUTIFUL BERRIES

$8.50 for $5.00 by Mail, or by Express $4.50.

The object of this remarkable offer is to bring these invaluable Berries before the public, and introduce my plants to new customers. After testing hundreds of varieties, I have chosen the following as the best of all the SMALL FRUITS, all things considered. At the prices asked by traveling agents the collection would cost over $20.00.



PARRY. Now being introduced by the originator and myself; unites more points of excellence than any other Strawberry. A seedling of Jersey Queen and a vast improvement upon that famous sort; the blossoms being perfect, the plant prolific with the growth, large size, beauty and high quality of its parent.

CUTHBERT. Now the most popular of all Raspberries. No other has yet proved of such universal adaptability; hardy in winter and a wonderful example of vigor during summer; berries always large, handsome and abundant.

HANSELL. Now being introduced by myself and unquestionably the most wonderful of all Raspberries. Earliest of all to ripen of any color or kind, large, insolens, bright crimson, vigorous; endures the severest cold, intense heat and prolonged drought unharmed—leaving nothing to be desired. The Raspberry for everybody to plant, North, South, East or West, whether wanting fruit to eat or sell.

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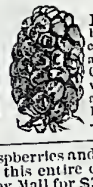

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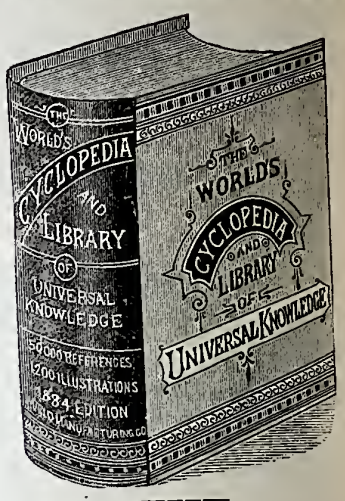

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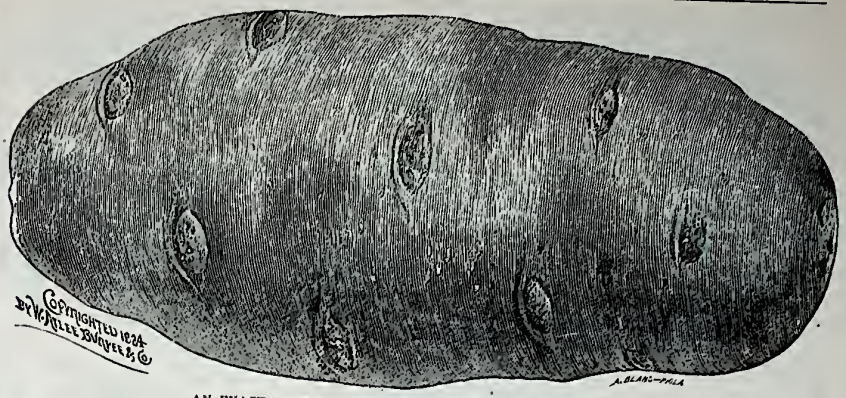

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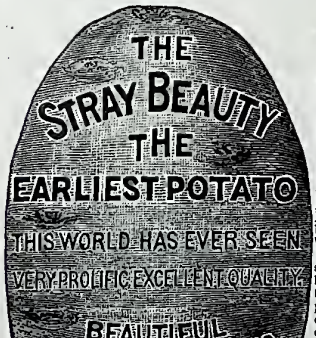

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OUR PROPOSITION *17 packets of seed and 60 cts.* one whole potato for **TWO collections for $1.10, FOUR for $2.** This is an offer never made before. to gladden the heart and brighten the way of every illier of the soil and lover of the beautiful has not with such unbounded success that we renew it with a more tempting offer, and here let us say we grow these seeds by the pound, by the bushel, and by the acre. **18 PACKETS CHOICEST FLOWER SEEDS FOR 50 CENTS,** one each, of **Asters, Balsams, Petunias, Portulaccas, Phloxes, Pansies, Verbenas,**—all finest strain and most beautiful colors. **Large Double English Hollyhock, New Dwarf Marigold, extra large double Zinnias,** bright colors. One **fine ornamental grass.** One **splendid climbing plant.** One **beautiful Everlasting Flower. 18 p'kts for 50 cts., TWO collections for 50 cts.** Packets are regular size, with directions for cultivating. Our **beautifully illustrated and descriptive Catalogue accompanies each order.** Address all letters and money orders to **SAMUEL WILSON,** SEED GROWER, **MECHANICSVILLE,** BUCKS COUNTY, PENNSYLVANIA

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Than the commonest kinds can be bought for. Any one of the collections named below sent **Free by Mail for $1.00,** or when a number of collections are wanted by CLUBS or otherwise at the exceedingly LOW RATES on the terms below stated.

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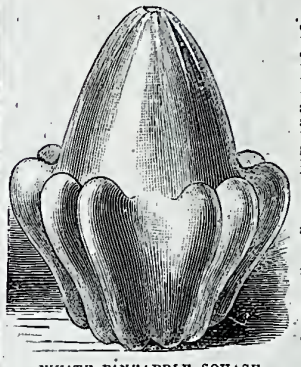
FOR THIRTY VARIETIES OF THE BEST VEGETABLES, 1885.



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4. **Burpee's Surehead Cabbage.** The *surest heading* and *best main crop cabbage.*
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6. **Burpee's Cuban Queen Watermelon.** Next to Burpee's Ironclad, the best of all Watermelons.
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8. **Round Yellow Danvers Onion.**
9. **Burpee's Heat-Resisting Cos Lettuce.** A superb variety, crisp and brittle.
10. **White Pineapple Squash.** A new summer and autumn variety of fine quality.
11. **Burpee's Cardinal Tomato.** Of a *brilliant cardinal red, smooth as an apple,* VERY SOLID, *with no green core.*
12. **French Breakfast Radish.** Very quick growing; white tail.
13. **Red Top, White Globe Turnip.** Of fine quality, *early,* and keeps well.
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20. **Long Smooth Blood Beet.** Large, smooth roots, blood-red.
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It is safe to say that our collection is unequalled by commercial florists in America.

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6 STRONG PLANTS (your own selection) for **$1.** 24 for **$4.** 100 for **$12.**
ROSES BY MAIL 10 for ONE DOLLAR.
We mail our Catalogue (beautifully illustrated) to all interested in Rose Culture, upon application, Free.
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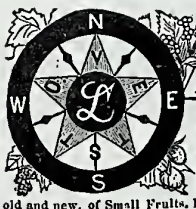

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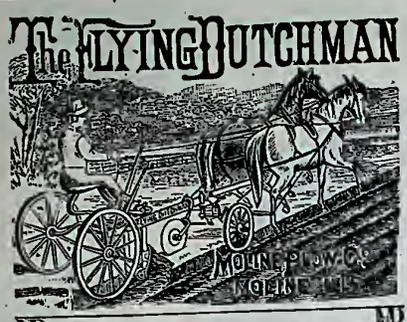

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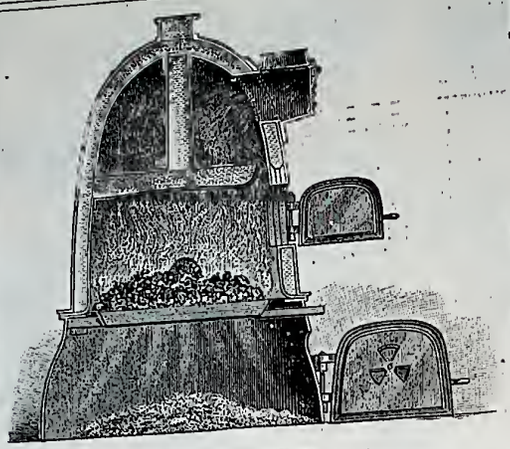
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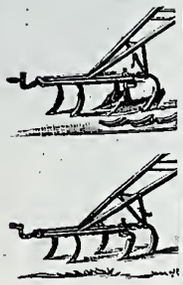

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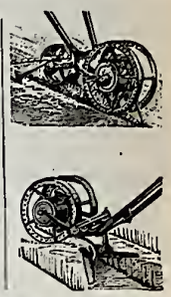

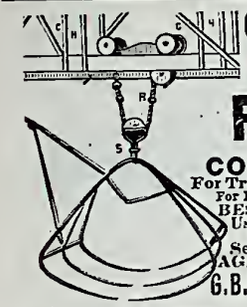

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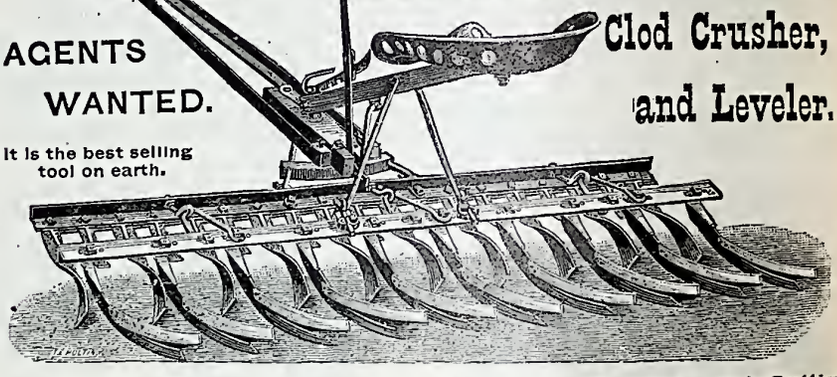

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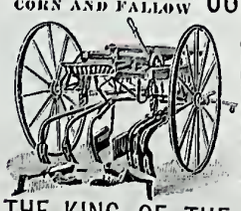

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For Turnips (late)—Use the Mapes "A" Brand Manure..... This is also an excellent fertilizer for using in the hills or rows for all crops—it is very safe.	40.00	4.00
For Grass Top-Dressing—Pastures and Lawns—Use the Mapes Grass and Grain Spring Top-Dressing—one to three bags per acre..... This is much superior to stable manure for spring application, particularly around dwellings, croquet-grounds, and lawns.	47.00	4.70
The Mapes Pure Ground Bone:		
"Meal and extra fine".....	36.00	3.60
"Fine".....	35.00	3.50
"Medium"—very lasting.....	34.00	3.40

These Manures permanently improve the land by adding to its stock of plant food, the same as stable manure. The decaying roots of most of the crops keep up sufficient supply of vegetable matter in the soil. Seven successive crops have been grown from a single application to a potato crop on poor land, and all the crops showed large increase over natural soil.

Freights.—By reason of present competition between the leading transportation lines, we can often ship at very favorable rates, particularly in car-load lots. Those ordering from us, even by the single bag, may rely upon our securing the lowest rate possible.

Send postal for pamphlet on manures for all crops.

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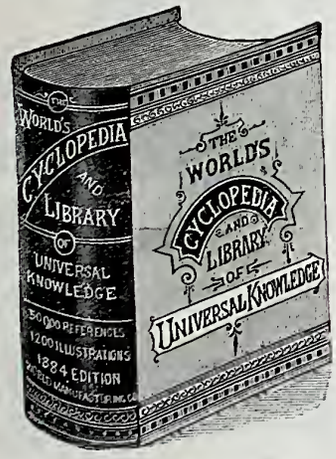
LADIES DO YOUR OWN STAMPING with our Artistic Patterns, for embroidery; easily transferred, and can be used fifty times over. Outfit post paid of 23 Elegant Patterns, with material, etc., **60 cts.** PATTEN PUB CO., 38 W. 14th St., N.Y.

$185 In Confederate money sent for 25c. Gold Quarters for 10c. T. S. Crayton, Jr., Anderson, S. C.

THE WORLD



CYCLOPEDIA.

A valuable Book of reference. See adv't on page 66.

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Who will send two subscriptions to THE AMERICAN GARDEN.

Penguin Island Guano

A pure natural guano, containing over 45 per cent of bone phosphate of lime and 1.25 per cent of ammonia, a fertilizer for all farm crops. Price $25 per ton delivered on board railroad or steamboat in New York, also at lowest market price. Sulphate of Ammonia, German, Sulphate of Potash, and all fertilizing chemicals. Send for circular to CHAS. SPEAR, JR., 85 West St., N. Y.

A SUGGESTION TO GARDENERS.

MARKET gardeners on Long Island now rely almost wholly upon fertilizers. It is said that over 5,000 tons are used in this small territory annually. Why? First,—Because they are cheaper than manure, although the Long Island farmers are so near New York City that stable manure can be brought to them in beat-leads at a very low price. Secondly,—Fertilizers are more cheaply applied, and produce as large crops of fully as good quality. It seems to us that market gardeners would do well to buy manure only for its mechanical action on the soil and for bottom heat. There are many market gardeners in the vicinity of Boston that are, as the Germans say, "manure sick." That is to say, they are in that condition in which there is not a sufficient supply of mineral elements to produce a paying crop. To such lands, mineral fertilizers or chemicals should be applied for they correct this condition. Let all market gardeners, therefore, who have not done so, try fertilizers on such lands. In other words, buy fertilizers, which are concentrated plant food, for the same reason that grain, which is concentrated animal feed, is bought for farm stock. Let the manure hold the same relation in the feeding of the soil, that the hay does in the feeding of stock. Hay is *bulky* animal food, while grain is *concentrated* animal food. Manure is *bulky* plant feed, while chemical fertilizers are *concentrated* plant food. In each case they are best used together.

Reports on Strawberries, Fruits, Etc., with Stockbridge Manure.

Kennebec Co., Me., CHAS. G. ATKINS.—I planted several hundred young apple trees on worn-out land, in May, 1881, making no preparation but the spading up of the places in the turf, and no manuring except three cents worth of Stockbridge Fruit Tree Fertilizer per tree. All lived, and made excellent growth,—from 10 to 30 inches on each twig. I shall use more.

Hillsboro' Co., N. H.,—G. & H. WHITTAKER.—We have used the Stockbridge Manures on Grass, Peach trees, and Grape vines, with good success the past season.

Barnstable Co., Mass., J. S. DILLINGHAM.—I have used your Corn Fertilizer, also Potato and Bean, and am well satisfied with the result. I have also used your Cranberry Dressing, for about 3 seasons, and have supplied my neighbors with it. We think it is valuable to make the vines grow and thicken. It helps the fruit and kills the moss.

Bristol Co., Mass., W. O. SWEET.—Having noticed in your pamphlet that Strawberries grown on Stockbridge would stand up better and produce finer berries than when grown on stable manure, I determined to experiment with it, and am well satisfied with the results. In 1879, I raised a good crop of Potatoes of superior quality, using nothing but your Stockbridge Potate Fertilizer. In the spring of 1880, I planted this piece of land—¼ acre—to Strawberries. After well pulverizing the soil with a La Dow harrow, the plants were set out in April, and the first bag of Strawberry applied in July following, then another bag in September, and the rest in April, 1881, making 600 lbs. in all. The variety of Strawberry is the Charles Downing. When the fruiting season came, the fruit stems were strong and well loaded with large, firm berries; and the berries were the same from first to last picking, presenting a fine appearance in market, and bringing a better price than the same variety grown on other fertilizer.

Middlesex Co., Mass., H. H. BOARDMAN.—I have used your Stockbridge Fertilizer on Strawberries the past season, with satisfactory results. It is better for that purpose than any manure I knew of. Your formula for garden crops pleases me equally well.

Windham Co., Vt., N. MONROE.—Applied 4 bags of your Stockbridge Fertilizer on my Strawberry patch, and the vines look better than when I applied a larger amount of stable manure.

SEND FOR PAMPHLET, MAILED FREE.

BOWKER FERTILIZER CO., { 27 Beaver St., N. Y. / 43 Chatham St., Boston.

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E. H. Libby, Publisher, Greenfield, Mass.

The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

Vol. VI.
Old Series, Vol. XIII.

APRIL, 1885.

No. 4.

A FAMOUS ORCHID HOUSE.

A FAMOUS ORCHID HOUSE.

Orchid culture is so rapidly increasing among us, and information about the "Royal Family of Flowers" so much sought after, that we present an interior view of one of the most celebrated Orchid houses in England, that of William Saunders, at Hillfield.

Ornamental arrangement and picturesque effects are natural to Orchid culture. The introduction of a few Tree Ferns and other tropical ornamental foliage plants through the centre of the house lends grace and variety to the general character, while the green foliage heightens the effect and brilliancy of the Orchid flowers.

All through the house, above, below, along the side, everywhere it literally swarms with Orchids, and to make room for the greatest possible number, the ingenious device is adopted of erecting curved or bowed wire trellises along the sides of the house near the glass. On these the smaller kinds cluster and thrive in luxuriant health, giving a fairy-like appearance to the whole.

Such a house may be made highly attractive and picturesque the year round. The baskets for the parasitic forms may be made in rustic work, in keeping with the plants growing in them, and the terrestrial species may occupy the ground and benches.

The increasing demand for Orchids has produced a more than corresponding supply. Now a dozen choice kinds can be bought at what a few years ago would have been thought low for a single plant. They will flourish in a Wardian case.

The Vegetable Garden.

SEASONABLE HINTS.

In the choice of topics discussed in this column we are naturally guided to some extent by the purport and number of inquiries received from our readers. Information about hot-beds seems to be predominantly sought for lately, and every person living in the country ought to know how to make a hot-bed. If we had our way about it we would teach it in every public school, and the fundamental horticultural and agricultural principles as well. Such instruction, if not more than an hour a week, would exert a powerful and beneficial educational influence, and add untold riches to the wealth of our people.

Hot-beds for forcing very early vegetables require considerable care in their management, but for ordinary garden purposes, little labor and expense is necessary. Procure fresh horse-manure, throw it in a loose heap till it heats, then turn it over, shaking it up loosely and mixing it well; leave it in this heap till it heats again, which will be in a day or two, when it is ready for use. Fill your frame with it to within eight or ten inches of the surface, pack firmly and put on your sashes. Now let it alone for a few days till it heats again and the greatest heat is past, then put in four to six inches of soil, if the seed is to be sown directly in the bed. Many prefer to sow in boxes and flats, in which case little or no soil is required. Seed should not be sown before the surface heat has declined to 100° or less. After that it will quickly cool off a few degrees more.

In using hot-beds be very careful for the first week to allow the escape of steam, and to do this you will have to ventilate at night as well as by day. In cold weather cover them up well at night. In watering plants in hot-beds do not drench the soil or pour on more water than is required, else you will cool the bed too quickly, and destroy the very end you should try to maintain.

Early Peas, earlier than one's neighbors, is the great aim of the ambitious amateur gardener. To succeed in this a warm, dry, sheltered situation is of first importance. But even under such favorable conditions, a week may be gained by sprouting the seed in the house in a box filled with moist sand, and kept in a warm place. After the young shoots and roots have appeared plant the Peas carefully in previously prepared ground. American Wonder may be grown very satisfactorily in a cold-frame.

Asparagus should be planted as soon as the ground becomes sufficiently dry to be worked. The antiquated methods of digging trenches and laying foundations of stones and old tin cans, practiced in the dark ages, have held on with remarkable tenacity, but are being rapidly superseded by those more in conformity with the nature of the plant. Rich, dry soil, and plenty of room are the main requisites for successful Asparagus culture, everything else is of secondary importance. Good one-year old roots are better than poor two-year old ones, or such as have been growing too thickly in the seed-bed. When planted, the crowns should be six inches below the surface.

SELECTING POTATOES FOR SEED.

Potato sets as used for planting correspond in their structural character with grafts of trees, and, in the case of single eye sets, with buds. They are not seeds proper, and it has therefore been supposed by many that improvement in Potatoes could be accomplished only by raising new varieties from seed. Some careful and ingenious experiments by Dr. E. L. Sturtevant, director of the N. Y. Experiment Station, throw a good deal of light on this question and are worthy of careful consideration. In the fall of 1883, says the Doctor, we selected and laid aside for seed the largest and the smallest tubers from the most productive, and the least productive hill of ten varieties growing in the Station garden.

On the 8th of May, 1884, this seed was cut into single eyes and planted, each selection by itself in the garden. So that we had four short rows of each of ten varieties, the first row containing the cuttings of the largest tuber from the most productive hill, the second those of the smallest tuber from the most productive hill, the third row the cuttings of the largest tuber from the least productive hill, the fourth those of the smallest tuber from the least productive hill.

The cultivation was alike and the treatment was alike during the whole period of growth, and when the tops were dead the rows were dug, and yield of marketable and unmarketable Potatoes carefully noted.

In order to bring the results into comparison we calculated the yields obtained to the 100 eyes, and arranged the varieties in the order of merchantable yield.

These tables furnish an important clue for progress in the improvement of the Potato. They seem to indicate very clearly that in order to increase our yield of Potatoes, it is only necessary in digging our crop to expose the hills separately, and then before harvesting go through and select our seed Potatoes from those hills which show the most abundant crop.

The experiment also seems to indicate that deterioration in a variety, whereby a good variety tends to become less and less profitable to grow, arises from the entire lack of selection from the point of view of the prolific plant, and that to obviate this deterioration it may only be necessary to yearly select our seed from the more prolific hills, instead of hap-hazard from the harvested crop. The importance of this experiment perhaps justifies the massing of our conclusions in the following table:

	Lbs. per 100 hills Average.	
	Mkt'ble.	Total.
From largest tubers from most prolific hill	83	106
From largest tubers from least prolific hill	66	85
From smallest tubers from most prolific hill	69	88
From smallest tubers from least prolific hill	45	69

From this table it appears first, that the merchantable and the total yield from the seed taken from the most prolific hill, yielded in excess over the seed taken from the least prolific hill; second, that the yield of the largest tuber from the most prolific hill exceeded the yield of the largest tuber from the least prolific hill; third, that the yield of the smallest tuber from the most prolific hill exceeded the yield of the smallest tuber taken from the least prolific hill; fourth, that the smallest tuber taken from the most prolific hill exceeded in yield the largest tuber taken from the least prolific hill; fifth, that the largest tubers from the most prolific and the least prolific hills yielded more crop than did the smallest tubers from the same hills.

The question may arise whether the smaller size of the cuttings from the smallest tubers may not account for the difference in yield. The smallest tubers from the most productive hills, however, did not exceed in size the smallest tubers taken from the least productive hills, and hence our results must be interpreted that the tubers from the most productive hills possess more inherent vigor than do those of the least productive hills.

While we cannot regard a single experiment as in any sense conclusive, says Dr. Sturtevant, yet the evidence seems so clearly in favor of using for seed only tubers from the more productive hills of Potatoes, that we think we cannot err in commending this subject to the careful consideration of Potato growers, and we would be very glad, this coming season, to have those who are interested in the subject make a trial according to this method, and experiment for themselves, and report the results, however they may result, to the public.

EXPERIENCES WITH PEAS.

An experience of many years in Pea-growing leads me to the conclusion that the same varieties may vary so much in different years as to give the impression that they were different kinds. The American Wonder, for instance, did splendidly with me when raised from headquarter seed, but when I planted the seed I had raised myself, from this stock, the crop was as early but very unsatisfactory as to quantity, while the quality was excellent. I never succeeded in producing single vines that would have more than a dozen pods; but the pods were large and full, and the Peas very sweet and fine-flavored. For the home garden they are excellent, they require no brush and can be planted in rows one foot apart, or as near as Bush Beans.

In raising Peas for market I have looked for quantity as well as quality. So my choice has fallen on some of the smooth white Peas like Carter's First Crop, or Philadelphia Early for first, McLean's Advance for second, and Black-Eyed Marrowfat for late. The Eugenie and Champion of England are good second early Peas. Dealers have a habit of affixing their own name to some early Pea; which makes about as many kinds as there are seed dealers.

Conditions of soil, vitality of the seed, time of planting, will make a difference in time of ripening in seeds from the same stock. Early Peas are thus much like the scholars in the old-fashioned spelling class; they have turns of going to the head. A uniform condition of earliness and yield, is the great consideration in a market Pea.

Some kinds should be planted thick and others thin. I had an illustration of this last year with Carter's First Crop Peas that were in bloom and had pods well set with Peas when the frost of May 30th occurred. The

frost stopped the growth of the vines at that point and a few of the pods matured. The Peas should have been ready to pick June 15th. After the frost the vines threw up two to six new shoots from each stalk, and by July 11th the last of the Peas from that growth were picked. The Peas had sprouted from the root, blossomed and borne in forty-one days. Moreover, I had a crop corresponding to the increase in vine, thirteen bushels from twelve square rods of vine, which goes to prove that some Peas may be planted very thick.

My practice is to manure heavily for Peas, while many of my neighbors plant after some well-manured crop of the previous year, and without manuring the same year. I never brush Peas, not even the high-growing sorts; they are picked twice, and then the vines are cleared off and the land plowed for a second crop; Sweet-Corn, Cabbage, late Beans, Pickles or Turnips.

I have found the Champion of England to boil hard, instead of tender, after it had passed a certain stage, a feature which I have not noticed in any other variety. For that reason I do not raise it.

I have given up raising my own seed as I can buy as good, or better, and as cheap as I can raise it, and what I can buy is not generally affected by the weevil.

My idea of a good market Pea would be one that had a nice clump of pods all ripening so near together that they could be picked all at one picking, while none would be too hard nor yet too green.

W. H. BULL.

EARLY SWEET CORN.

Gain in earliness in Sweet Corn has, as a rule, been accompanied by a corresponding diminution of size. With but very few exceptions all the extra early varieties we have grown were so small and imperfect as not to be worthy of cultivation.

The Early Bonanza Sweet Corn, now being introduced by Johnson & Stokes of Philadelphia, is claimed to be free from this objection, and to be larger than any of the older early varieties, and as early as the earliest. Our illustration, which was drawn from nature, shows its general appearance and prolific tendency.

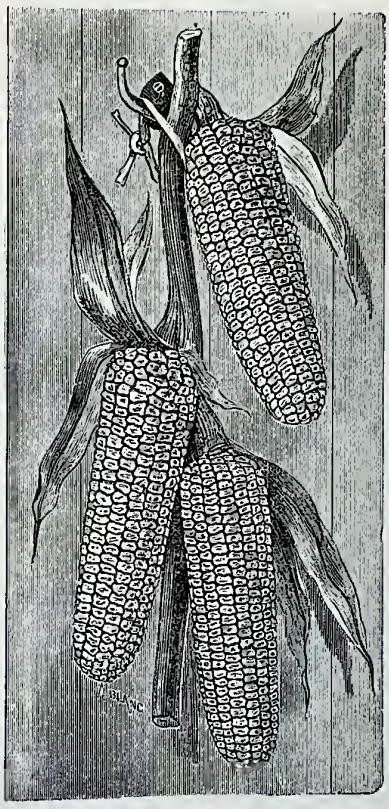
It originated with a market gardener near Philadelphia who had for a few years astonished his brother-gardeners by having in market some weeks ahead of them fine ears of Sweet Corn in great abundance. Its table qualities are said to be unexcelled in sweetness and rich flavor. We consider it well worthy of trial, and shall give it liberal space in our own experiment garden.

RAISING VEGETABLE PLANTS.

While it is a comparatively easy matter to raise vegetable plants for the family garden or the truck patch, to insure best results more care has to be bestowed upon them than is usually given. Often times the plants have a good seed bed and obtain a firm start, but are allowed to stand too thick and thus become spindling and almost worthless.

Young plants, to be able to withstand the attacks of insects, and of drouth and other adversities of weather, need to be as strong and vigorous as possible. To produce this result they should be transplanted often and carefully, which is especially necessary with Tomatoes, Peppers, and other tender plants requiring delicate treatment. A single Tomato plant which has been cared for properly before the final transplanting, and has developed a good strong growth, with a stout, stocky stem and plenty of fibrous roots, is worth five times as much as the spindling affairs that are often offered as apologies for plants.

Small flower-pots, boxes, or even tin cans may be used where only a limited quantity are grown, but on a large scale this is of course not practicable. My experience in this direction has been largely with hot-beds and cold-frames, the plan followed being to transplant from one bed to another once to three times before the final setting in the open ground. The distance apart in the beds varies somewhat according to the available space and the size of the plants, as they may be placed quite closely when necessary, but of course the roots cannot be preserved so carefully in taking up when the plants stand very close together. When these preliminary transplantings are impracticable, and one is obliged to transfer the plants directly from the seed-bed to the open ground, much may be gained by proper care in planting.



THE EARLY BONANZA SWEET CORN.

Last season, with the assistance of my "right hand man," I set out several thousand choice seedling Potato plants,—during a very hot and dry spell in June. Owing to lack of space in the beds they had not been transplanted previously, and consequently had grown rather spindling. The seedlings were planted in long rows, quite close together. A drill of the proper depth being opened, and after clipping off the larger leaves to prevent too rapid evaporation, the plants were planted in the furrows with just enough earth drawn in to support them in an upright position. The drill was then sprinkled and completely soaked with water, and afterwards filled with earth which was thoroughly pressed down with the feet, the dry soil thus forming a mulch and checking evaporation.

This was done during the two hottest days in June, which were followed by nearly two weeks of dry, hot weather, yet I did not lose five per cent. of the plants, while had they been planted in slipshod manner, probably not five per cent. would have lived. Therefore it is well to remember that if a plant is worth planting at all, it pays to plant it well.

W. H. RAND.

GROWING ONIONS.

With no other crop is thorough preparation of the land of more importance than with Onions, and when to this are added careful cultivation and skillful management, Onions can be made one of the most profitable products of the garden or farm.

It is a peculiarity of this crop that it may be grown repeatedly upon the same soil, and thrives best upon the rich vegetable black mold of reclaimed swamps. For such a crop, plowing is not required; the surface only needs working to a depth of four or five inches, and on the rich mellow Onion land this is most perfectly done by the "Acme" Pulverizing Harrow, Clod-Crusher and Leveler, by which the soil is turned over equally as well as by a plow, and mixed and worked together so as to distribute fine manure and fertilizers perfectly through it, better than it can be done by a plow, and at one-tenth of the expense, and in one-tenth of the time. Where several acres of Onions are grown this implement is indispensable, as indeed it is for every farm or garden crop grown.

MIDDLETOWN.

[The merits of the Acme Harrow are not in the least over-rated in the above, as we know from personal experience. For thorough mixing and mellowing of the soil preparatory to sowing seed or planting fruit and vegetable plants it is far ahead of all other implements made for the purpose.—ED.

THE MELON SHRUB.

Melons growing on shrubs are the latest vegetable wonder reported from California. The shrub is said to have been introduced from South America, and although its botanical name is not given we surmise that it is not a Melon proper but one of the many species of *Solanum* that bear edible fruits, similar to the Egg-plant.

Solanum Quitoense is a shrubby plant with berry-like fruits resembling small Oranges in size, color and taste, and of peculiar fragrance.

S. muricatum, the Pepino of Peru, is a shrubby species with egg-shaped, edible fruits, which are white with purple spots, and attain a length of six inches.

NEW REMEDY FOR CABBAGE WORMS.

The latest remedy recommended consists simply of ice-cold water, or water but a few degrees warmer than ice-water, sprinkled upon the worms during the heat of the day. An application in the hot sun is said to cause them to quickly let go their hold upon the leaves, curl up, roll to the ground, and die, while the Cabbages suffer nothing, but look all the fresher for the application.

HOT-BEDS.

It is a common, but mistaken notion, that hot-beds derive, or at least should derive, a considerable portion of their heat from the sun. Probably more than half of those who construct hot-beds believe that the glass is used to admit the warmth of the sun. The truth of the matter is that the office of the glass is to admit light, and not warmth, and the warmth derived from the sun frequently does more harm than good.

The chief source of heat is the manure used in the foundation of the bed. Its fermentation can alone produce sufficient heat to germinate the seeds and keep the plants growing, and it is sufficient for this; while the heat derived from the sun, being confined to the middle of the day, and totally lacking at night, destroys the equability of temperature essential to the best results, and which can easily be had when only the manure is depended upon for heat.

As the heat of the sun is not essential, and as the chances are that it is on the whole injurious, the hot-bed is best built in some situation shaded from the direct rays of the sun. However, it should not be in an exposed situation, for that is only increasing the difficulties to be overcome by the fermentation of the manure. I would advise that it be situated on a southern slope, or better, in the lee of buildings. A splendid place is in the area protected by a straw stack built in the shape of an L.

To the growth of the plant, not to the germination of the seeds, however, light is absolutely essential. Hence, while the heat of the sun is cut off, the light must be freely admitted. This is why the covering is properly of glass or some other transparent or translucent substance—to admit light. By building a high shelter over the bed the heat of the sun is intercepted, but not the light; and a hot-bed so sheltered will give the best results.

It follows, then, that glass is not essential; any substance which will freely admit the light will answer; and where the hot-bed is not shaded from the sun, there are other materials better for the top than is glass. Such a material is white cotton cloth of a close texture, treated as follows: Stretch it and nail it on the frame. Then mix 2 ounces of lime-water, 4 ounces of linseed oil, 1 ounce of white of eggs, separately; 2 ounces of yolk of eggs; mix the lime and oil with a very gentle heat; beat the eggs separately, and mix with the former. With this mixture coat the cloth, using a paint brush; continue coating till the cloth becomes waterproof, allowing each coat to dry before another is applied. This cloth costs only about one-fourth as much as the same area of glass, and repairs are correspondingly cheaper and much more easily made. A further advantage is that while the cloth admits the light freely it excludes the heat of the sun from the hot bed.

The heat all comes from below, and the temperature of the bed is equable; and no matter how warm the sun, the bed does not require watering, and the plants are never struck down or checked in their growth. The plants also grow more stocky and hardy. As the reader knows, the great trouble with hot-bed grown plants is that they grow spindling and weak. This is because of the heat from the sun. Naturally the plants grow toward the heat; but when it is shut off, the plants keep nearer the heat from below, and the result is a stronger root formation, with a shorter, stockier stem. As the vapor arising from the manure is condensed by the cool air passing under the cloth, it hangs in drops inside, keeping the air warm and moist, the conditions most favorable to plant growth. Plants grown under the cloth do not require such delicate attention while hardening for transplanting as those grown under glass.

From what I have written, it is apparent that the object in making the north or west side of the frame the highest, is to ward off winds and not secure the more direct penetration of the rays of the sun. When the bed is otherwise protected from cold winds, the frame can be made level, and this greatly simplifies its construction.

JOHN M. STAHL.

EARLY POTATOES IN NEW ENGLAND.

For a readily salable market crop, early Potatoes are highly prized with us. Early Ohio and Beauty of Hebron reach a marketable size quicker than any other variety we have tried, if planted on high, dry land where they are not liable to be injured by spring frosts.

About the 1st of April we prepare the seed-pieces, using sound, marketable tubers. Ordinary-sized ones we use whole, very large ones we cut once or twice, leaving two strong eyes to a piece and cutting out the rest. After cutting we place in barrels or boxes and put in the cellar again for ten days or a fortnight until ready to plant. The pieces dry off and harden but do not shrivel. Seed treated in this way makes a strong start and an even stand, and the crop ripens evenly.

As early as the ground can be worked we manure, plow and harrow thoroughly. Furrow out the rows three and a half feet apart, make a loose, wide furrow five inches deep, drop the seed-pieces eighteen inches apart, and just cover as lightly as possible with earth. This can be done quickly with the foot when dropping the seed. Then scatter special fertilizer or super-phosphate of lime along the row over the seed and cover all about two inches deep, thus leaving the top of the drill an inch or two below the surface of the ground.

Planted in this way you can work the crop the first time to advantage with the smoothing harrow. Cultivate shallow and often and finish with the hoe, drawing the earth around the plants, smothering any weeds and leaving the ground level. Poison the bugs, and as soon as the tubers are of marketable size dig them with a five-tined garden fork.

E. A. JAMES.

MANAGEMENT OF SANDY SOILS.

While sandy soils are generally better adapted to gardening and the raising of root crops especially, yet in a season of drought they dry out much more rapidly than heavier lands. A naturally light soil with a good proportion of sand will produce better roots than any other, provided it is rich enough to induce quick growth. For this reason well rotted manure should be liberally applied, and by this plan soil that otherwise would not give a paying crop can easily be made profitable by proper management.

Rotted bagasse thoroughly incorporated in the soil will do much towards retaining moisture in light, sandy soil that will dry out rapidly. And if the soil is naturally rich, a liberal application of this material is generally all that is necessary to supply the required plant-food. I have found that on sandy soil it always pays to use only well-rotted manure. The special advantage for garden work of a light, loamy, sandy soil in working, is not only in preparing the land for seeding but also in cultivating and keeping it mellow. Coarse, raw manure destroys to a considerable extent this most valuable property, while in applying a fertilizer, it should be done in such a way as to increase rather than diminish the advantages such a soil possesses. If care is taken to fine the manure well before applying, the work of incorporating it into the soil is comparatively easy of accomplishment.

If fertility alone were needed, the very best plan would be to apply liquid manure, but if a material to retain moisture is also required, well-rotted stable manure is much better. Where bagasse can be procured in sufficient quantities to be used for bedding cattle, it furnishes the very best material for a compost intended to enrich a light, sandy soil and at the same time to retain its moisture.

N. J. SHEPHERD.

FRESH SPROUTS.

Successful gardening is a continuous warfare with bugs and beetles, borers and grubs, worms and maggots.

How much manure can be used with profit in the garden, is the leading question with the market gardener, not how little he may get along with.

A Virginia farmer recommends to provide Sweet Potatoes with brush or some other support to climb upon, and thus prevent the vines from taking root.

It is estimated that a quarter of a million acres of Sunflowers are grown in Russia. The oil expressed from the seed is used mainly for industrial purposes.

The object of experiment is primarily to establish facts, and secondarily to draw proper deductions from these facts in their various relations, says Dr. Sturtevant.

Asparagus requires a good deal of potash. Capt. John Moore has a bed of an acre and a half, on poor soil, which has never had a shovelful of manure, but has been dressed with phosphate of lime and potash, and is growing nicely.

Spinach, unless sown very early in spring, is apt to go to seed before it is fit for use. The Round-leaved is better than Savoy-leaved, and Long-standing is the best of all for spring sowing.

The *American Grocer* estimates that during the past season there were put up 2,021,177 cases (or 48,508,248 cans) of Tomatoes, being about one-third less than the pack of 1883, the decrease in acreage being heaviest in the Eastern States.

The Fruit Garden.

SEASONABLE HINTS.

As soon as the frost leaves the ground, and the soil becomes dry and friable, is the best time for planting fruit-trees, Grape-vines, and berry plants of all kinds. Those starting into growth earliest should, naturally, be planted first, and, with proper preparation, tree planting may be finished before other garden work becomes pressing.

If the ground has been plowed and the holes have been dug in the fall or early winter, much time may be gained now, and the soil will be in more favorable condition than if the work were left until the spring time.

Ordering Trees should have been done before this. To delay ordering till the day before it is intended to plant, is sure to result in disappointment and loss. Trees ordered and received early in the season are almost always of better quality than late ones; partly because the best or "regular" stock is sold first, and principally because the work of digging and packing is done more carefully before the rush of the season, than when all is hurry and bustle.

Causes of Failure with trees which were originally of first quality are manifold. In digging, too many roots may have become injured, and cut off; defective packing is another cause, but more disastrous than all else is exposure of the roots to air, sun, and wind. A few minutes exposure to drying winds may make all the difference between a future healthy, vigorous tree, and a sickly or dying one.

Unpacking Trees. The roots of trees should never be uncovered for a moment longer than is absolutely necessary. Before unpacking the box or bundle, a wide trench should be dug, into which each tree as it is taken out is to be placed at once, covering its roots with fine soil so that it comes in contact with every part of them, as much as possible. To throw a few shovels of heavy, solid soil upon the roots does not do much more good than a board, still it is better than no protection at all.

A tree heeled in properly may remain for weeks until wanted, all summer in fact, without injury.

Pruning Young Trees is easier and more advantageously done before than after planting, and most conveniently while the trees are heeled in. The better the condition of the roots the less pruning of the top is necessary, yet every tree should be cut back at transplanting, not only to give it proper shape, but to increase its vigor. How much to cut off varies according to the condition of the tree, but on an average one-half to two-thirds of the previous year's growth should be removed either before or immediately after planting.

Black Knot on Plum and Cherry trees produces new spores early in spring, spreading the disease a thousand fold. The most advantageous time for cutting away afflicted limbs is therefore before new spores have formed. But to do any good the work must be done thoroughly by cutting off every branch that shows the least indication of the destructive Black Knot.

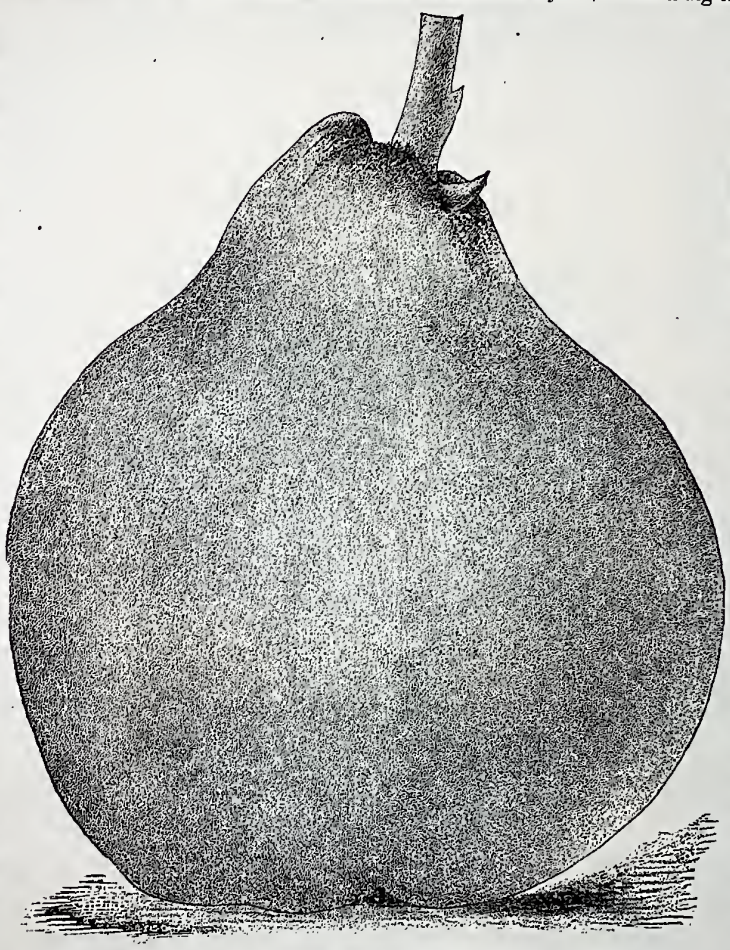
QUINCE CULTURE.

Of all culinary fruits none is more highly prized than the Quince. What housewife is there who does not appreciate this fruit to season, as the saying is, Apple-sauce, even if not abundant enough to preserve by itself. Precious things, as a rule, are well cared for, yet the Quince is an almost universal exception to this maxim. Why should it generally be planted in situations where no other fruit will thrive? A wet position is selected for this tree, of all others the least able to withstand excessive moisture at its roots. The weakest part of the Quince is the roots. The fine fibres fill the ground with a perfect net-work, running very close to the surface, rendering cultivation, after a few years, impossible, requiring mulching as a protection from the summer's heat and winter's cold.

Select for the Quinces a deep, rich, cool soil, where the whole surface can be exclusively occupied by the tree. The trunk as well as the roots need careful protection. The afternoon's sun should be kept from the trunk by causing the branches to start near the ground, not over a foot or eighteen inches high. Train in tree rather than bush form, that is to a single trunk, as illustrated on the following pages. After planting use coarse manure as a mulch, bearing in mind the fact of the Quince being a gross-feeder.

A Quince-tree in healthy condition will produce an abundant crop of fruit and make new wood from six to eight feet in height. The secret of early bearing is forcing the growth, and severe pruning. Judicious pruning yearly in the fall or winter is a pre-requisite to successful culture. In the culture of all fruits subject to borers, these are a great, if not the greatest, cause of weakening the vigor of trees; hence make an examination in September for them, and if found dig them out most thoroughly.

For general culture the Orange or Apple Quince give the best satisfaction, yet there are at the present time several new varieties before the public, some of which seem to deserve extensive trials, but whatever kind you purchase, give it a fair chance. The difference in the fruit of the same variety, even, between ordinary and good culture, is frequently so marked as to render the Quince problem in relation to varieties not always an easy one to determine by the grower. J. B. ROGERS.



MEECH'S PROLIFIC QUINCE.

MEECH'S PROLIFIC QUINCE.

Foremost among the new varieties of Quinces alluded to above, stands Meech's Prolific, now introduced by Hance & Borden, Red Bank, N. J. The original tree was brought to Vineland, N. J., by one of the early settlers from Connecticut. In its new home it proved so much superior to the older kinds in cultivation that it attracted the attention of Rev. W. W. Meech, an experienced amateur pomologist, through whose agency its good qualities became more favorably and extensively known.

The late lamented Charles Downing said: "It is a promising variety, and if it proves as good in other localities, and continues its present good qualities of fair fruit and good size, as those sent me, it will be an acquisition to the Quince family. It will take some time to decide fully as to all its merits in various soils and localities, but from what little I have seen of it, I believe it will prove worthy of general cultivation, and I really hope it will."

The introducers consider the variety adapted to all the wants to be supplied by its kind. "It is remarkable for its great productiveness, trees bearing sometimes when only two years old, and every year afterwards with such abundance as to need vigorous thinning. The fruit is of a handsome Pear shape, smooth-skinned, of a lively orange yellow, and of extra size and flavor."

STRAWBERRY EXPERIENCES.

With each recurring spring, the perplexing question about the best Strawberry forces itself on our attention. We are therefore glad to be able to lay before our readers the results of extended experiments made at the Ohio Experiment Station, under the direction of so careful an observer and exact experimenter as Prof. William R. Lazenby.

The soil upon which the varieties named below were grown, says the Professor, is a moderately rich clay loam, and was enriched with a light coating of stable manure.

All the varieties, except those noted, were planted in the spring of 1883. Ordinary cultivation was given, and the runners allowed to take root, forming matted rows. In the fall the bed was mulched with straw, which was allowed to remain until after the berries were picked. The season was quite favorable, although a slight frost destroyed some blossoms and a drouth cut short the yield of fruit.

Alpha—This proved to be one of the earliest varieties. Berries, medium to large, and quite attractive in appearance. Plants healthy, but only moderately productive.

Atlantic—The plants of this variety were set in the fall, and bore but little fruit. The berries are of good form and color; plants healthy and moderately vigorous.

Bidwell—Failed to fulfil the promises made for it. The plants are healthy and vigorous, but are much inclined to overbear. Many of the berries are small and present a seedy appearance, which with the large size of the calyx renders a box of unassorted fruit unattractive. It would probably give better results grown in hills.

Big Bob—Unsatisfactory in every way.

Charles Downing—This variety bore a very scanty crop, but the berries were all that could be desired. The Downing furnishes a plentiful supply of pollen, hence is a good sort to plant with pistillate varieties. Our experiments show that it imparts to a considerable extent its own glossy appearance to the berries of such varieties as it fertilizes.

Cumberland—Ranks with the Downing as to productiveness, but like it bears much better the second year than the first. It is an excellent variety for home use, or for near markets, where it commands a good price.

Crescent—This variety was the most productive of all those tried. It was also the earliest of any good variety. It has proved to be in this and many other localities the most profitable variety for market.

Cornelia—The plants of this variety were set in the fall, hence it is impossible to give a correct opinion of it. It seems, however, to be a very promising late variety.

Daniel Boone—Fall-set plants gave a good crop. The berries are of good form, size and color; plants healthy, vigorous and productive. This is certainly a very promising variety.

Early Canada—Very early but lacking in size and productiveness. The berries toward the last are too small to pay for picking.

Finch's Prolific—This variety furnishes an abundance of pollen and is a good kind to plant with pistillate sorts. Its greatest fault is its unproductiveness.

Hart's Minnesota—Plants vigorous and productive. A valuable variety.

Jersey Queen—A very fine berry. Plants are healthy and vigorous but unproductive.

James Vick—The plants are very vigorous and productive, but even the first berries are small, and toward the last of the season are not worth picking. Quality inferior.

Lacon—This is a marvellously vigorous and productive variety. The berries are rather soft, often irregular, medium size and not of extra quality. Hence it is not likely to become a popular sort, either for home use or market. It has, however, too many good qualities to be discarded. It may do better in hills.

FIVE YEAR OLD MEECH'S PROLIFIC QUINCE TREE, BEFORE PRUNING.

Miner—Stands next to Crescent in productiveness. The berries are medium to large, regular, good color and of excellent quality. For home use it is unexcelled, but is perhaps too soft for shipping long distances, although firm enough for near market. It has the fault of not coloring evenly, which necessitates care in picking and packing. This is a good variety to plant with pistillates.

Manchester—This is undoubtedly a good variety in many localities, but it is affected badly by the rust on our grounds. The berries are all that can be desired, but the plants lack the vigor to carry a good crop through.

Mt. Vernon—A very fine late variety, but seems not to be sufficiently productive to be profitable.

Norman—Berries very fine; plants vigorous and moderately productive.

Nigh's Superb—This variety apparently has nothing to recommend it.

Old Iron Clad (Phelps)—Did very poorly here. Plants apparently lack vigor to mature the large amount of fruit that sets. The berries were small and full of hard lumps.

Piper—Berries medium to large; plants vigorous and productive. It seems to be affected somewhat more by the drouth than most other varieties, but it possesses so many good qualities that it is deserving of extended trial. Would undoubtedly do well in hills.

Prince of Berries—The plants were set in the fall and failed to make sufficient growth to produce a crop. Seems to lack vigor here.

Sharpless—Seems not to be perfectly adapted to this locality, doubtless partly because it is so easily affected by frost. The number of stamens and amount of pollen appear to be variable, hence if planted to fertilize pistillate varieties a proportionately large number of Sharpless plants should be used.

Sucker State—Berries very regular and uniform in size; plants vigorous and productive. This is certainly a very promising variety; the objections to it being too light color of fruit, and berries parting too easily from the calyx.

Windsor Chief—This is a vigorous and productive variety, ranking with Miner, next to Crescent. The berries are medium to large, rather acid, moderately firm, but glossy and of fine appearance. It certainly must take high rank as a profitable variety for near market. Would do well in hills.

RUSSIAN FRUITS.

In the extreme northern portion of the United States are large areas within which the Thermometer registers nearly every winter 30° to 40° below zero, and where almost all varieties of English and American Apples winter-kill. To discover varieties suitable for these regions has long been the aim of many pomologists, and it was with this view that Mr. Charles Gibb of Canada and Prof. Budd of Iowa visited Russia to learn what varieties of Russian fruits might be specially adapted to the higher latitudes of America, where most varieties are too tender.

The results of their investigations are worthy of the most careful study. It appears that they found the Anis Apple, the Antonovka, and some others successfully raised as far north as Kazan, 430 miles east of Moscow, far from the modifying influence of any large body of water, and yet 600 miles north of the latitude of Quebec, and where Fahrenheit's Thermometer registers not rarely 58° below zero. In this region of extreme cold the people raised Apples as one of their chief industries, and the trees escaped these severe winters without injury.

These "iron-clad" varieties will surely become a great boon to the cold sections of the North and Northwest, and from some of the best of these seedlings will undoubtedly be raised that will be about all that can be desired in quality, and hardy as their parentage.

For the wilder portions of the United States, we have varieties of our own sufficiently hardy and of better quality than the Russian Apples. South of the Michigan lakes, of middle Iowa, of central New York, and the latitude of Boston generally, there is therefore little need of introducing Russian Apples, so long as we succeed well with better kinds. And yet the Yellow Transparent, Red Astrachan Alexander, and Duchesse of Oldenburgh, have so many desirable points, that we may forego their extreme acidity, in view of their high colors, strong growth, productiveness, and healthy foliage. Seedlings of these in the near future may be expected to attract the special attention of pomologists by their high claims.

The Russian Cherries, Prof. Budd thinks, we may certainly give a fair trial without risk of much disappointment; these are fine for cooking; some being good for the table, and so beautiful, so productive, so promising, as to merit trial at least. So with Russian Apricots, among which we may, and probably shall, find varieties hardy, productive, and excellent, that will be a great acquisition.

The Russian Mulberry as a choice fruit is a disappointment, and where the Downing can be raised there is no need of trying the Russian for its fruit; of its hardiness there is no doubt.

The journey of Messrs. Gibbs and Budd to Russia will prove of great service to the northern belt of the United States and Canada, and the infusion of Russian blood into our future new varieties of fruits may exert an important influence in the progress of American Pomology. P. M. AUGUR.

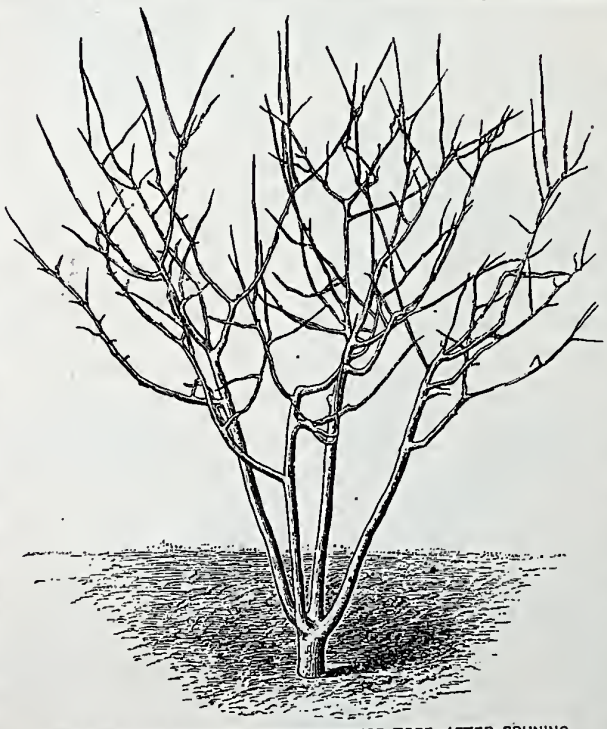
PROTECTING VINES FROM FROST.

Late spring frosts, as is well known to fruit-growers, are more to be feared in Grape-growing districts than severe winters, as in the course of but a few hours they may destroy the prospects of a plentiful harvest. The symptoms of frost, which usually manifest themselves shortly before sunrise, unfortunately can only be discovered or detected by careful, vigilant watching throughout the entire night, and even then it is often difficult to foresee them. The preventive appliances hitherto used, such as stationary covers, mats, etc., often possess little value, as from any sudden change in the course of the wind their utility as a shield is only good in one direction.

The formation of artificial clouds, produced by the burning of tar, writes Mr. J. Jouanne, in a recent number of *Le Gaz*, is, without doubt, one of the best protectors.

A row of flat-bottomed, open-mouthed porcelain vases, each containing 5 to 6 kilogrammes (12 to 14 pounds) of tar, is placed around the borders of the land to be protected. The vases are usually set from 20 to 25 meters (66 to 81 feet) apart. To facilitate and hasten the lighting a piece of oakum or a bunch of straw saturated with petroleum is stuck in the middle of the filled tar vase; with a similar piece of burning oakum, fastened to the end of an iron rod, the contents of the whole row of vases can soon be ignited. Almost immediately a thick, heavy smoke arises, continuing to ascend during the progress of combustion: and being blown by the wind, from whichever quarter it comes, soon spreads over the whole field.

As it is generally during a calm that the frosts are most dreaded, the absence of the wind only tends to increase the thickness of the smoke that issues from the vases and hovers among the vines; it is most efficacious, therefore, at the time it is most needed. The vases should be provided with a lid, made of a simple piece of wood, when it is intended to place them in position in advance of the time of their being needed, in order that their contents may not be exposed for too long a period to the action of the elements. These tar pots, arranged in this manner, and on the side of the field most exposed to the prevailing winds, are ready to be at once put to the use of protecting the vines as soon as the first symptoms of frost are felt.



FIVE YEAR OLD MEECH'S PROLIFIC QUINCE TREE, AFTER PRUNING.

In order that the vine-grower may be notified of the near approach of the frost, the following is suggested. A mercurial thermometer should be armed with a float and an electric contact, so arranged that when the column of mercury would fall to a degree corresponding with a temperature approximating near to a hoar frost, the circuit of the pile attached to the thermometer would be closed, and thus put in action an electric alarm clock. This clock could be stationed in the proprietor's sleeping apartment, or in that of his superintendent; the thermometer might be placed in the field, or in any convenient location outside the house, in such a position as to be at once affected by any decided change in temperature. By this means the frost itself would sound the signal of alarm, and all would be in readiness to avert the threatened danger.

FRUITS OF THE FUTURE.

The methods of cross-fertilization and hybridizing are now so generally understood and so easily learned, said the Hon. H. M. Engle before the Pennsylvania State Horticultural Association, that more should apply themselves to this work. True, it is like a lottery, where the large majority draw blanks; but nature would not be true to herself in permitting stock breeders to obtain their ideal, and refusing the same knowledge in the vegetable kingdom; for if stock breeders can by proper selection breed beef, or butter, or milk qualities, or size, or color, or dispense with horns, why may not similar ends be obtained in the vegetable kingdom? Why not establish varieties of Apples without cores, of which we hear occasionally, or Peaches without seeds, as we find now and then very fine specimens with only the rudiments of pitts? May we not hope that the laws which govern such matters will be known in due time. Meantime, let all who can raise new seedling fruits and flowers observe closely, and keep a record of all items of interest that may seem new. Crosses should be made by design, which would form a reliable basis for future operation.

Especially would I induce women to engage in this delicate work, since they can manipulate such fine processes better than men. A beautiful and enchanting, and a possibly profitable field is here open for women.

SHORT CUTTINGS.

The Duchess Grape is rapidly growing in favor.

Experience teaches that while irrigation increases the size and quantity of fruits, it, at the same time, deteriorates quality and color.

A tree derives about as much nourishment from manure spread close around its stem, as a horse would from a bag of grain fastened to its back.

Large crops are not always the most profitable; quality rather than quantity is growing in appreciation, and purchasers desire large, showy fruits, of good quality, in preference to inferior ones.

The principal conditions for successfully growing English Gooseberries in our country are a rather heavy, cool soil, heavy mulching during summer, keeping the bushes open in the center, and when they start into growth in spring, disbudding so as to prevent over-bearing.

The prospect for fruits in Illinois is gloomy enough. The Peach crop is gone, says the Editor of the *Farmer and Fruit Grower*, the Pear twigs are badly frozen and many Apple-trees are injured. Strawberry fields are badly lifted, and not able to yield more than two-thirds of a crop. Blackberry and Raspberry canes are damaged considerably in exposed places. All fruit crops are likely to be small.

The Flower Garden.

EASTER BELLS.

Lent was dreary and late that year;
April to May was going;
But the loitering moon refused to round,
And the wild southeast was blowing.

Day by day, from my window high,
I watched, a lonely warder,
For a building bird in the garden trees,
Or a flower in the sheltered border.

But I only heard the chilly rain
On the roof of my chamber beating;
Or the wild sea wind to the tossing boughs
Its wail of wreck repeating;

And said, "Ah me! 'tis a weary world
This cheerless April weather;
The beautiful things will droop and die,
Blossom and bird together."

At last the storm was spent—I slept,
Lulled by the tired wind's sighing,—
To wake at morn with the sunshine full
On floor and garden lying:

And lo! the hyacinth buds were blown;
A robin was softly singing;
The cherry blooms by the wall were white;
And the Easter bells were ringing!

I think of the garden after the rain;
And hope to my heart comes, singing,
"At morn the cherry blooms will be white,
And the Easter bells be ringing!"

—*Youth's Companion.*

SEASONABLE HINTS.

Some of the sweetest and most desirable flowers for cutting have been driven from our gardens because no place can be found for them in the formal modern ribbon bed; and yet every person endowed with good taste admires them when found in vases and jardinieres in the homes of friends.

Sweet Peas are not excelled for this purpose. Ah, I forgot to plant Sweet Peas this summer! is an exclamation heard frequently when it is too late for sowing; but seasons go and seasons come, and they are forgotten again. If you want the most beautiful return in sweet flowers for the smallest outlay, plant Sweet Peas. Sow as early as the condition of the ground permits, select a rich, warm location,—in the kitchen garden does very well, if they cannot be admitted in the stately flower garden,—mark out drills three feet apart and drop the seeds two to three inches apart. If sown thicker they will not give much satisfaction. When above ground, give short brush, as with common Peas, keep the ground hoed, and if you want an unlimited supply of flowers, cut daily and allow none to go to seed.

Pansies for autumn blooming may still be sown in a gentle hot-bed or in the house in pots placed near the window. As soon as the plants are large enough they have to be pricked out, and later transplanted to a prepared bed shaded from the midday sun. This shading is an important part, as the Pansy is a cool climate plant that cannot stand our fierce sun without this precaution being taken. In dry weather water has to be given daily; and all flower buds must be pinched off as they appear until the cooler autumn weather. Plants in flower now will continue to bloom much longer and better if the flowers are taken off every day. You can never have too many, place them in every room of your house, and gladden the hearts of your friends with gifts of Pansies.

MORNING GLORIES.

IPOMŒA.

The great interest that has been taken lately in the Moon Flower *Ipomœa Noctiphyton* induces me to call attention to a few other species of this beautiful genus of mostly climbing plants. Many of them are popular for their fine foliage and large showy flowers that will always attract attention or admiration in whatever situation they are to be found.

The Ipomœas, or as they are popularly called Morning Glories, form a very extensive genus of twining or climbing annual and perennial plants of rapid growth during the summer season, attaining a height of from ten to thirty feet, and covering almost as much in breadth with their bright green foliage, their magnificent white, blue or purple flowers which are produced from the axils of the leaves in the greatest profusion from early in the season until the plants are destroyed by frosts in the fall.

But very little care or skill is required to cultivate them successfully, and they may be grown in any situation where they can be given a well enriched, deep soil; and during our hot dry summer weather a good mulching of course stable manure will be found of decided benefit to them. Support should be given early in their growth before the plants commence to run, and during their season of growth they should be occasionally examined and their shoots trained so as to occupy the desired space.

The most preferable method of obtaining strong and healthy plants is to sow the seeds in a well drained pot of light loamy soil early in spring. Place the pot in a warm, light situation, and keep the soil moist, but not over-watered. As soon as the young plants are strong enough to be handled, transfer them into three inch pots; keep them close and moist until well established then remove to a cooler situation, and gradually expose to the open air, and plant out when all danger of frost is over.

I. Leari is a tender perennial species, and one of the most beautiful and useful of all; it is of vigorous rapid growth attaining a height of from twenty-five to thirty feet, and its large blue flowers are produced in the greatest profusion. The seeds of this species should be sown early in February and the young plants encouraged to grow as rapidly as possible. A few cuttings taken in the fall will give a supply of plants for the ensuing year, or the old plants may be cut back on the approach of cold weather, taken up carefully, potted, and placed in any situation where a winter temperature of 50 degrees can be maintained. Water sparingly, as the object is to keep the plant in a partially dormant state.

I. rubro-cærulea, and *I. rubro-cærulea alba*, are also varieties of rapid growth attaining a height of thirty feet and should be given a treatment similar to that advised for the preceding, but as they are annuals it is of no use to try to preserve the plants through the winter. Young plants must be obtained from seeds every season.

I. limbata elegantissima has very beautiful large flowers with rich bluish purple center in the form of a star, with a broad pure white margin, and grows from fifteen to twenty feet.

I. hederacea superba grows from ten to fifteen feet in height and has bright, blue, white margined flowers and Ivy like leaves.

I. coccinea, commonly called the Star Ipomœa grows from ten to twelve feet high, and has small scarlet flowers which are produced in the greatest profusion.

I. Burridgii grows from twelve to fifteen feet high, and, in its season, is completely covered with bright crimson flowers.

Although those named are among the most desirable and easiest grown there are many other beautiful species and varieties worthy of a place in the flower garden.

CHAS. E. PARNELL.

HOW TO RAISE CUTTINGS.

If we would have our gardens gay with flowers the coming summer, we should now make cuttings from the Geraniums, Verbenas, Heliotropes, Fuchsias, etc., wintered in the house, all of which will root quickly if the needed light and moisture required for their growth are given.

The old-fashioned way of rooting cuttings in a small glass bottle, filled with water, is an excellent method when a hot-bed cannot be obtained, but care must be taken not to let the bottle stand so close to the window pane that the water will become too hot, and thus scald the tiny rootlets. If large-mouthed bottles are used, and many cuttings are placed in them, cover the outside edge and a little of the inner rim of it with cotton wool. This will prevent the evaporation of the water, and what does dry up should be replenished with tepid water.

In two or three weeks the bottle will be full of the tiny white roots, and then the cuttings must be transplanted into thumb pots, or, if the season is favorable, they can be placed in the beds where they will grow rapidly, and soon put forth buds and flowers to repay you for your labor. As you take each cutting from the bottle, dip the roots into a little sand, slightly warmed. This will keep them apart and make them grow better and prevent the cuttings from wilting after transplanting. Stir the roots gently in the sand, until each fibre becomes well coated with it. If pots are used, fill them nearly full with a rich, sandy compost, and press it towards the edges of the pot, so as to leave room in the centre for the roots. Put them in gently and give the plant a little twist to throw out the roots, or spread them out carefully with a hair-pin. Then put in more soil and press it tightly about the roots. Tight planting is one of the secrets of success in raising plants from cuttings, for if the soil is lightly thrown in, and no heed is taken to make it in close contact with the roots, they cannot start into growth as quickly, and will often wither up. Water the young plants well, and shade them from the hot sun for two or three days and you will not lose one of them.

Cuttings can also be started in pots of sandy compost, with a glass tumbler placed over them to confine the moisture, which, if not given, will cause the cutting to wilt and die, but if kept under glass and shaded from the sun for two days or so, it will not wither a leaf. Then place the pots in the warmest window, with a south-eastern exposure, and they will soon show signs of growth.

Wet sand is also excellent for growing cuttings, and they can be started in it quicker than in compost, but a shallow pan

or saucer is better than any deeper receptacle. Fill it up with sand,—not sea sand, but common yellow sand, and wet it sopping wet, then press in the cuttings with the fingers, planting them very tightly, and keep it very wet all the time, because if allowed to dry up at all, their growth will be checked, if not destroyed. When the old leaves have dropped off and new ones show themselves, root growth has commenced, and in two or three days the plants can be transplanted into pots filled with light, sandy loam. After shading a day or two they can have all the sunshine that is obtainable, and sufficient water to keep them moist must be given. This is so simple a process of starting cuttings that a child of eight years can grow them without difficulty.

There is, however, some skill in selecting cuttings, as they will always strike root better if taken from the fresh growth of a plant rather than from hardened wood. If a branch of a Geranium, Feverfew or Verbena will break off readily, it is in a right state to grow rapidly, and it is better to break it off than to cut it, because it leaves an irregular surface from which the roots will put forth more quickly. Other cuttings, like those of Roses, Heliotropes, etc., will grow better if taken at the junction of the old and new wood, and they should be cut off just below a joint or bud, as the roots start from that point, and if a bud is not left near or close to the base, the cutting is liable to decay in the soil.

Many of the hard-wooded shrubs and plants are most easily propagated in the garden. Cut off young shoots with a little old wood attached, and plant them with some sand at their base, and you can raise Wigelias, Duetzias, and all kinds of Roses in quantities. But the more tender Fuchsias, Verbenas, Heliotropes, Carnations, Calceolarias, and Geraniums, must be raised under glass, or in sand, in-doors, if you would possess a good supply of bedding-out plants wherewith to decorate your parterre in the coming summer.

DAISY EYEBRIGHT.

THE SHOWY LADY SLIPPER.
Cypripedium spectabile.

Prominent among our most beautiful native herbaceous plants are the Lady Slippers. All the species, six of which are indigenous to the Northern States, are interesting, closely resembling in their flowers the gaudy epiphytic forms of the tropics; but *Cypripedium spectabile* with its large, pure-white flowers tinged with purple in front is the most showy. The stem is thick, leafy, about two feet high, and bears two or three flowers. It is found in peat bogs and swamps, from New England to Wisconsin, and southward along the Alleghanies.

For cultivation out-doors a cool, damp, half-shady situation, and a bed of peaty earth is most suitable, but it may also be grown in ordinary soil, provided the surface is kept well mulched during summer with swamp moss, which retains moisture better than any other material.

The plants may also be kept in pots in a frame, which is generally the most successful mode of culture. In either case they do not like to be disturbed much, and should therefore not be transplanted oftener than becomes absolutely necessary. When removing them from their native locality, which is best done when the plants are in bloom, as large a ball of earth as practicable should be taken up with the roots. For forcing in winter they are well adapted, and clumps of flowering plants may be seen in our florists' windows at this season.

[For the accompanying illustration from Henry Baldwin's charming work on the Orchids of New England, we are indebted to the publishers, Messrs. John Wiley & Sons, New York.]

CYPRIPEDIUM SPECTABILE.

Among the best plants for edging carpet beds are: Alternanthera, Achyranthes, Arameria, Pyrethrum, Echeveria, Sedum, *Oxalis Deppii.*

THE ADONIS.

An annual that deserves more attention than it gets, is the Adonis. I do not understand why it is not more frequently used, for it is sure to be admired when grown well. It is a plant of very easy cultivation. It does best in a rather sandy soil, well enriched with old manure.

There are but two distinct varieties in general cultivation. One of these, *æstivalis*, is a summer bloomer, of a bright scarlet. The other variety, *autumnalis*, is, as its specific name indicates, a fall-bloomer, and is of a rich blood-red color. It has broader petals than the summer-blooming variety, and is one of our best plants, at least among annuals, for use in the garden during the latter part of the season. The foliage of both varieties is very fine and feathery, and affords a pleasing background against which the brilliant flowers are effectively displayed. The plants will bloom well in shade.

To obtain the best satisfaction from the Adonis, it should be used in masses, as, when grown in that way, if the plants are set about a foot apart, it completely covers the ground, and one sees a compact body of rich foliage, starred over with brilliant flowers. R. E. E.

OUR FLOWER BASKET.

Most Lilies thrive best among clumps of Rhododendrons, and in the borders of shrubberies.

The Clematis is not only among our very best climbers, but is also admirably adapted for bedding purposes.

Violet plants should be started early in spring, so that they may be well established before the summer drouths commence.

In the arrangement of cut flowers it is well to bear in mind that "green gives character, white gives brilliance."

A heavy mulch of Tobacco stems on Rose beds is not only an almost infallible preventive of blight, but serves also as a most excellent fertilizer.

All the innumerable forms and variations in Pansy flowers may be arranged into six distinct classes, says Albert Benz, viz.: 1, Self Colors; 2, Shaded; 3, Three-spotted, or Face; 4, Five-spotted, or Odier; 5, Edged or Bordered; 6, Fancy Pansies.

Honeysuckles and most shrubby plants can readily be propagated by bending down a branch in spring and covering a portion of it with soil. In autumn it will be rooted, and may be separated from the parent plant, and transplanted.

The Window Garden

AND GREENHOUSE.

THE WINDOW GARDEN FOR APRIL.

Our window plants now are growing and blooming freely. Arrange that the stronger do not smother the weaker ones. Water copiously all plants in vigorous growth, using water that has the chill taken off rather than very cold water right from the cistern, barrel or well.

Attend to shortening the shoots to preserve the plants in stocky condition, and use the tips you cut off as cuttings.

Re-pot such plants as need shifting, and prick out and pot or box young seedlings, or pot or box off rooted cuttings before they get drawn, crowded or otherwise weakened.

Continue to strike cuttings of all plants which you desire to propagate, also sow seeds. If you have not space for all of your young plants close up to the glass in your windows, remove the hardier kinds of them to a cool room. Here they are less apt to become spindly than in the warm room.

Ventilate freely every warm and sunny day, by opening the windows early in the day and shutting them early in the afternoon. Avoid draughts. If the warm sunshine causes any of the plants to wilt, a screen of thin mosquito netting drawn between the plants and glass or on the outside of the window will be of much service, but it should be removed at all times except during warm sunshine.

With our old plants, newly rooted cuttings and young seedlings, our windows will, probably, be getting rather crowded, but if we may have such auxiliaries as hot-beds or cold frames, we can find relief.

HOT-BEDS.

Directions for the construction of hot-beds have been given in former numbers of THE AMERICAN GARDEN, so that it will not be necessary to repeat them here. If you wish to strike cuttings in the bed or put into it the small plants from your windows, then an inch or two of sifted coal ashes over the manure is as good as anything to set the pots on or plunge them in.

When we have many kinds of flower-seeds to raise in a hot-bed, I prefer sowing in shallow flats and setting these in the bed. In this way if one kind of seed takes longer to come up than another, I have not to wait for it before using the space vacated by the early seed, but, instead, can move out and crowd up the boxes.

COLD FRAMES

Are excellent places for wintering Violets, Polyanthuses, Anemones, Forget-me-nots, Pansies, Biennial Stocks, Wall-flowers, and the like; for giving us flowers from March to May; also for wintering summer-blooming Carnations, Penstemons, and other herbaceous perennials almost but not quite hardy.

But apart from their use as winter quarters to these, cold frames in spring are excellent places in which to start seeds of Zinnias, Stocks, Asters, Marigolds, Mourning Bride, Drummond Phlox and many other plants, to be in time transplanted to our beds and borders.

Carnations, Paris Daisies, Verbenas, and many other plants can be put out into cold frames, not only for convenience' sake, and to have them near the glass, but as a place in which they can readily be hardened off before being planted out for the summer.

Geraniums, Stevias, Ageratums, Lantanas, Hibiscuses, Cape Plumbago may now be transferred to the cold frame with benefit to themselves, providing frost is not allowed to reach them. But Coleuses, Iresines, Alternantheras and similar tender stock should not be trusted in a cold frame before May.

Cold frames containing tender plants should be shut up early so as to retain some extra sun heat, and covered up well at night. In warm weather the sashes may be removed by day, but in cold weather or on the occasion of sleet or drenching rains keep on the sashes day and night.

HARDENING OFF PLANTS.

No matter how hardy a plant may be, if wintered in a window frame or greenhouse, it should not be planted out in the garden in spring without first being well hardened off. Therefore we should not be entrapped by the moist and sunny weather we usually have towards the end of April, in suddenly putting out of doors to stay out any of the tender plants we have wintered in-doors. It is inconsistent that we should trust tropical plants to the mercy of our northern weather, before our own Oaks, Hickory, or Indian Bean have spread a leaf or burst a bud. Putting our plants outside to get the benefit of a warm, gentle shower does them much good, but we should bring them in-doors before night.

VIOLETS.

Those that have been blooming all winter long, will, toward the end of the month, begin to grow and spread considerably and cease flowering. As soon as that is the case lift the clumps, break them up and secure all the good, strong side shoots—most of them will have a few shoots—and plant them closely in a cold frame in sandy soil as you would cuttings. They will soon begin to root nicely, when, after being gradually hardened off, they may be planted out in rows in the garden. These young plants make the best stock for blooming next winter.

WM. FALCONER.

TUBEROUS ROOTED BEGONIAS.

Of all beautiful plants for summer pot-culture I know of nothing more attractive than the new Tuberous Begonias. For three years I have grown them and find them so easily managed that I can highly recommend them.

Little tubers, about half an inch across, purchased three years ago this spring, are at this time three inches in diameter. All last summer, and from their earliest growth, they were a mass of flowers, but the tubers have grown with surprising rapidity, and what was one last year I propose to divide into four this season. They are as easily divided as Gloxinias, and unless wanted for bedding out or large specimen plants, it is better to divide large tubers and start the parts in small pots of sandy soil and repot as soon as well rooted, filling in about the ball of earth as slipped from the small pot, with rich porous loam. They are vigorous growers, and soon fill small pots with roots which hold together nicely in slipping from one crock to the other.

Tuberous Begonias should be potted as early as convenient in the spring. Much of future usefulness depends upon rooting well before leaf growth commences. All are liable to push early. Therefore it is necessary to watch closely, as the beauty and symmetry of the plant is very materially injured by an early, tender growth. It is a good plan after potting summer-flowering tubers, to keep them in a dark place, moderately warm, until convenient to place them in the window garden. But by all means bring them immediately into light and sunshine as soon as they show a determination to grow. Unless well started and blooming before the usual hot, dry days of our summer months, it will do little or no good. All delight in a rich, porous soil, and only with divided, fresh-cut tubers sandy soil—that is more sand than loam—is preferable for starting.

I have no greenhouse or conservatory, and speak strictly from window garden experience. By using small pots for the beginning, one can often find room for starting a large collection of these choice and novel plants, beautiful in foliage as well as flower.

S. C. H.

THE ABUTILON.

One of the best plants for the house is the Abutilon, better known, perhaps, as Flowering Maple, from a resemblance of the foliage, in some varieties, to that of the Maple of our woods, and sometimes called Fairy Bell, because of its pendulous, bell-shaped flowers. It is a plant that grows well under circumstances not favorable to the satisfactory development of most plants, being able to withstand dry air and the gas emanating from coal fires. In this respect it is quite equal to the Geranium. It has very pretty foliage, and its flowers, while not as showy as those of many other plants, are very pretty and attractive, and are produced almost constantly. This is one reason why it is such a favorite, wherever grown, for it is rarely without a few flowers.

There are many varieties. One of the best is Boule de Neige, pure white, and a profuse bloomer. Santana is the nearest approach to crimson of any I have tried. The old variety, bearing yellow flowers, veined with scarlet, has the best habit of growth, and, to my mind, the finest foliage. The variety *Thompsoni* has leaves beautifully blotched with yellow, the blotches having the appearance of mosaic-work. It is a free bloomer, its flowers being yellow and crimson. [A double form of *A. Thompsoni* has recently been introduced by Peter Henderson & Co., New York, to whom we are indebted for the accompanying illustration. It originated in a "sport" which, while it retains the beautiful mottled yellow and green foliage, produces flowers that resemble in form a double Hollyhock.—ED.]

There is a variety of slender growth, *vexillarium*, which has long leaves in which the variegation of yellow is very effective. This variety is of great use for baskets, or to grow in pots occupying an elevated position where its long branches can droop to suit themselves. They should never be tied up, or trained in any way, if you would get the best effect of the plant. I have a plant of it in my collection which completely covers the pot in which it grows, and gives

one the impression of a plant bathed in sunshine, because the yellow in the leaves is so bright.

The Abutilon will grow well in any good soil. If care is not taken to make plants bushy, by pinching in well while young, they will grow tall, and have few branches; but, if kept well pinched back, many branches will start, and it is easy to make shrubs of them, or pretty little trees. If the tree-shape is preferred, train the plant to one stem until it has reached a height where you want the head to form. Then cut it off. As soon as branches start at the top—all others must be cut off—pinch them back to within a few inches of the main stem. Keep up this pinching-back until you have a dozen branches started. Then you can let them grow for awhile; but after they have reached the length of a foot or more, it is well to cut off the ends, to thicken up the plant.

In growing *A. vexillarium* for baskets, the branches must be made to grow low on the plant, therefore do not allow it to grow tall before pinching begins. Begin this early, in order to get as many branches as possible. The plant is easily managed, if one perseveres in pruning by pinching.

The Abutilon is seldom troubled by insects of any kind. In this respect it is equal to the Geranium. It will endure a lower temperature than most window plants without injury. It grows readily from cuttings. Small plants can be procured of any florist, in spring, for 15 or 20 cents; these will become good-sized by fall, and will help to make the window bright and pleasant through the winter months.

E. E. REXFORD.

DOUBLE, VARIEGATED ABUTILON.

CALLAS.

The Calla Lily, as it is popularly called, is one of the most desirable window plants, and yet it is not generally successfully managed. Those having plants will do well to keep them growing in a light, sunny window during the spring months. If they have not flowered, do not lose patience and set them in the background; bear with them until the first of May, then find some shaded, damp corner in the garden, and in this plunge your plant over the rim of the pot. About twice a week during summer carry along with you a basin or watering-can of soapy water, and give your Calla a dose.

Toward the middle of September dig it up, and if the pot appears too small for the plant, get a pot one or two sizes larger, turn the plant out, transfer it into the larger pot without breaking the roots, and place it in the lightest, sunniest window at command. As it begins to grow, give plenty of water and frequent stimulants and by Christmas, if these directions are followed, you will be sure to have flowers. After the flower-buds appear, the plant may be placed in a very warm position without injury from ordinary changes of temperature. JOHN THORPE.

GREENHOUSE FUMIGATION.

Fumigating plants, says Josiah Hoopes in the N. Y. Tribune, is, in the hands of an experienced gardener, perfectly safe with rarely an exception, and always efficacious. Some species of plants will not stand even a small amount of the fumes,—as the Ferns and Heliotrope, for instance,—but these are exceptional. It is better to smoke a little and often, than to fill the house full of dense, hot smoke at one time. The stems must never be allowed to blaze, but be sufficiently damp to smoulder and emit the destructive fumes. This is so penetrating that when the greenhouse adjoins the dwelling, it seems next to impossible to prevent the odor from finding its way into the latter. A damp cloth fastened over the connecting door or window, however, will in part remedy the evil.

Our best gardeners fumigate regularly once a week, and none less than every alternate week, believing that "an ounce of prevention is better than a pound of cure." This systematic smoking prevents the aphides from obtaining a foothold in any considerable number, and a less amount of smoke will asphyxiate them. It is a good plan to syringe the plants in advance of fumigation, and then again after the smoke passes away.

Another method is suggested by a correspondent, that of evaporating a strong decoction of tobacco, filling the greenhouse with the vapor. This is easily done by setting a lamp inside of a stovepipe collar, so that the top of the chimney reaches to its top, while below there is a draft provided for. A pan containing the tea is set on the top of the collar on two pieces of wire, which leave an opening large enough for draft-exit. This vapor reduces and checks the fly when used once or twice a week, but there are always some left unasphyxiated.

Bulbs of Hyacinths, Tulips, Narcissi, that have bloomed during the winter months, should be kept dry until planted out doors.

OUR WINDOW BOX.

Furnace gas is one of the deadliest enemies of house-plants.

Lysimachia nummularia, the moneywort, though old and common, is one of the best and prettiest basket plants.

Soft-wooded plants should always be placed nearest the light, while hard and smooth-leaved ones will not suffer in quite shaded situations.

Leaf-mold, rotted cow manure, and good garden loam in equal parts, with a small addition of sand, well mixed together, makes a suitable soil for nearly all plants.

One part of kerosene beaten thoroughly with two parts of common soft-soap, and then mixed with water, forms an effectual remedy for red spider and mealy bugs.

Ferns are among the prettiest and most satisfactory window plants. Some of our native kinds are highly ornamental and may be had for the trouble of digging them up in the woods.

"There can be no surer indication of a happy home than a flower-decorated window, or neatly kept garden, however small it may be," says the author of the Window Flower Garden.

To prevent the frequent breaking of large flower-pots, the Germantown Telegraph recommends to place around them as they are purchased a single line of wire—copper being best—just underneath the rim of the pots.

Cobæa scandens is one of the best plants for training up the sides of a bay window. Wire may be fastened along the sides and over the top, on which to train the vines, which will soon cover the wood work and hang from the top in graceful festoons of delicate green.

For a small, choice collection of Geraniums, J. G. Barker recommends, for single, General Grant and Orbiculatum, scarlet; May Queen and Master Christine, pink; Miss Gertrude and Mrs. George Smith, salmon; and Pauline Lucca and Snowflake, white. For double varieties, Bishop Wood, crimson shaded with cherry red; Henry Cannell, bright scarlet, and Mme. Thibaut, pink.

Ever since THE AMERICAN GARDEN commenced its mission—and a sweet one it is—I have been a subscriber.—*Mrs. L. G. Mason, Charlotte Co., Va.*

I take the . . . . , but there is more practical information in your January number than in the January and February numbers combined of that magazine.—*R. R. C. Bardwell, Yates Co., N. Y.*

The March GARDEN is certainly the handsomest paper printed, either here or in Europe. I have never seen cuts nor type look equal to it. Your advertising patronage is simply "immense."—*A. Blanc, Philadelphia.*

Lawn and Landscape.

MAGNOLIAS.

The advent of actual spring is heralded more conspicuously by the flowers of certain varieties of Magnolias than by those of almost any other tree. The blossoms of these Magnolias seem during late spring to have really come too early, for we find them venturing forth in great numbers during April snow-storms, when the tree itself is bare, and, we might fancy, shivering with cold for want of its regular garment of leaves.

We should, perhaps, however, for the purpose of lawn planting, classify the hardy Magnolias into two divisions, consisting of those that bloom before the leaves are formed, and those that bloom in June when the foliage is in full panoply.

Of those that seem in haste to bloom, the most conspicuous is the Chinese Yulan Magnolia, fitly termed *M. conspicua*. The earliest and perhaps the most beautiful is the star-shaped, Clematis-shaped, water-lily-shaped *Magnolia stellata*. The charms of the Yulan, or, as it is interpreted, the Lily Magnolia, have been long recognized and celebrated, and can hardly be praised too highly for anyone who has seen a specimen thirty feet high, covered with thousands of white, sweet-scented blooms, a snowy pyramid of flowers without a green leaf to be seen. Each individual bloom is some three or four inches long by as many inches broad, cup-shaped and of firm texture. The foliage when it appears is of good size, fine appearance, and vigorous. *Magnolia conspicua* is hardy in the latitude of New York after it has become well established, but during extreme youth and the first year after transplanting, it is occasionally cut off by cold and changeable winters.

Several forms of this Magnolia are used on the lawn, one of the best of which is *Magnolia Soulangeana*, a hardy, vigorous variety, of a purple tint on the inside of the cup and base of the petals. *Magnolia Lennei* is a royal purple variety of much vigor, but in some localities it is less hardy than *Soulangeana*.

The other early-blooming species referred was *Magnolia stellata*, a Japanese variety of surpassing beauty. It is the earliest of Magnolias, and sometimes has its petals touched with severe late frosts, but except on rare occasions the pure, translucent, white flowers blossom in perfection, covering with a thickly-set, rounded mass the entire contour of the branches. The delicate rich perfume, moreover, emanating from the mass of flowers, forms a great attraction to the bees. This Magnolia is dwarfed and more truly a bush than any other hardy species, while it is at the same time more capable of sustaining the stress of sudden changes of heat and cold and transplanting. There are several other Magnolias that bloom before the leaves appear, but we have considered the most important.

Of the Magnolias that bloom in June after the foliage has developed, the finest, perhaps, for both leaf and flower, are two Japanese species, *M. hypoleuca* and *M. parviflora*. The foliage of *hypoleuca* is large, silvery underneath, and red veined; that of its companion, *parviflora*, is less striking, though rich and effective in texture and hue, but in odor it surpasses all other hardy Magnolias, being strongly and delightfully spicy. The flower of *parviflora* is also remarkably beautiful, consisting of a milk-white cup-shaped form, suggesting remotely the bloom of *M. glauca*, and a magnificent crimson center of curiously arranged pistil and stamens. The odor of *hypoleuca* is also strong and pleasant. These late Magnolias do not bloom as abundantly as the early flowering species and varieties, but their general effect on the lawn as large trees, whether in bloom or out of bloom, is always fine. Unfortunately they are, as yet, comparatively rare.

Magnolia acuminata, *tripetela* and *cordata*, all native species, are excellent late-blooming fine-foliaged trees for the lawn, but of all American kinds, *Magnolia macrophylla* is the most effective, with its great leaves, eighteen inches to two feet long, giving it the effect of some great tropical Palm astray in the North. It is strange that this large-growing, splendid tree is not planted more, for it is quite as hardy as other Magnolias.

The thought naturally arises as we consider briefly a few of these attractive trees, of which over a score are named in nursery catalogues, why more are not used on the lawn. It is, in the first place, because they are difficult to propagate and consequently expensive, and, in the second place, because they have peculiarly sensitive roots which make them difficult to transplant except under special conditions.

These special conditions are young, vigorous, fibrous rooted, two years transplanted, low-grafted specimens set out just as the flower is in full bloom or the leaves just starting. Like all other trees and shrubs that are difficult to transplant, the roots of Magnolias must not be allowed to become dry from exposure to sun and wind, nor must the soil and air be parched and hot at the time of setting out. It is an excellent idea to mud the roots well before setting out.

S. PARSONS, JR.

TRAINING ORNAMENTAL TREES.

Tastes differ in regard to form, and while some like a finished uniformity of outline, others dislike any approach to sameness. I have noticed an article in a widely circulated agricultural journal, by a farmer, in reference to trimming street trees. He recommended trimming up the stems to ten feet, and then by means of a card board, either circular or oval, held before the eye as a guide, trimming the outline of each tree to an exact and regular figure, each the counterpart of its neighbor.

Trimming is evidently this man's ideal of horticultural pleasure, and having traveled in France he had had his inherent American disposition to use the "little hatchet" stimulated in a new direction, by observing the stiff and studied rule-of-thumb methods of dealing with trees and shrubbery in that country.

Most of our villages have an ordinance obliging people to trim off the lower limbs of street trees to a height of ten or twelve feet. This seems necessary to avoid the various obstructions, but between these, too close planting and the mangling of the tops by telephone companies, our method is no more satisfactory than the French. The example of the cramped, narrow, spindling tree of the village street constantly before us is injurious, deadening the sense of the beautiful in natural trees, and leading many persons to go through the world with ideas in regard to this matter as cramped and distorted as the trees themselves.

We should always bear in mind two facts in regard to trees: one that each tree has a beauty peculiar to itself; the other that this beauty is only fully developed where a tree is completely exposed to the air and light, unimpeded by contiguous trees. There is of course a beauty of trees in groups, and the combined outline is often delightful, but there is a constant struggle going on within the group, and the inner branches die, and sooner or later the group loses its beauty, while exactly the opposite takes place in specimen trees of our best varieties, which increase in stateliness and beauty as they grow older.

Another class of smaller trees is so constituted that it thrives under such conditions, blossoming and forming striking objects of beauty beneath the drip, or in close proximity to larger trees. The Hawthorn, Dogwood, Red-bud, and Service-berry are among these, and are highly useful in making an artificial copse or deciduous background. But even these trees have a characteristic beauty that is wonderfully enhanced when allowed independent development. In fact, our most desirable trees need little if any trimming, except when very young, and then it should be done by nipping in the bud rather than by excision.

Here is a beautiful field for experiment, education and amusement open to ladies. The growing of ornamental trees from seed, and directing their youthful branches into positions that will make them objects of marked beauty in after years, is full of interest and fascination.

Next to giving a tree plenty of room, allowing it to branch low is most essential to its most beautiful development, to promote which the overhanging branches should diverge from the main trunk at a height not to exceed four and one-half feet. There should not be less than three main branches, and these may be kept free from ramifications up to such a height as may seem desirable. All this preliminary work should be done while the tree is yet in the nursery.

Much hacking and mutilating of ornamental trees might be avoided if people would plant with a regard to the space to be filled, the prospective hiding of desirable views in later years, and the character of trees desired. If the taste is for broad trees and the lawn is extensive, then plant spreading kinds like the Oak and Chestnut. If the space is narrow and the preference is fastigiate forms, then plant the Lombardy Poplar, the Upright Cypress, the Irish Juniper and other trees of this character, forms which, by the way, are far too scarce. There is a wide opening in this direction for originating and discovering trees with an upright habit of growth. What an imposing and striking object a Maple, with the form and height of the Lombardy Poplar, would be in autumn.

L. B. PIERCE.

Foreign Gardening.

NOTES ON THE CATTLEYAS OF THE AMAZON.

During a residence of some eight years in Para and on the Amazon we have received many letters asking information as to Amazonian Orchids. The notes given in Orchid manuals that a certain Orchid comes from Brazil, lead many to suppose that it comes from the Amazon, whereas the Amazonian region, vast in extent as it is, comprises only a small portion of the immense empire of Brazil. The two genera of Orchids concerning which there is the most inquiry (and well do they merit the attention) are Cattleya and Lælia. Now there is not a Lælia of any species in the Amazonian valley, nor, as far as our knowledge extends, have any ever been found on any of the Amazonian tributaries. To the north Laelias are found in Mexico and Gautemala, but the Brazilian Lælias are natives of the southern provinces, generally in the region of Bahia or Rio de Janeiro, and thence toward central Brazil. The large genus of Cattleya is also sparingly represented in the Amazon valley, the great proportion of the Brazilian Cattleyas being natives of the same regions as the Lælias. But as compensation for the lack of number the Amazonian Cattleyas are preeminent for their beauty.

To one who now has only to wire them on to the trees or on to blocks which hang on the fences, to have them establish themselves at once and bloom profusely, the general complaint that they do not thrive in cultivation would augur want of proper care, did not his experience in times past in their culture in the Orchid-house lead him to believe that they are not easily grown. A few notes as to the conditions under which they naturally grow may furnish some suggestions as to their culture.

The Cattleyas of the Amazon are *Cattleya superba* and its varieties, *El Dorado* and its varieties, *luteola Wallisii* and the almost unknown species, if *species* they be called, *Schoerderi* and *Leeana*.

None of these are found on the Amazon this side of Manaôs, which city is situated on the river Negro just above its junction with the Amazon, about one thousand miles from Para, and, as far as our knowledge goes, no Cattleyas have been found above Tabatinga, the frontier fortress on the Amazon between Brazil and Peru. They are also, except *Cattleya luteola* (and perhaps *superba*), confined wholly to the northern bank of the Amazon.

The Cattleya region thus seems to comprise a tract of about eight hundred miles on the northerly bank of the Amazon, extending northerly to Guiana, Venezuela and Colombia. The whole of this region for many miles north of the Amazon is of the same general character; *varzea* or land overflowed in the annual rise of the rivers, with stretches or isolated portions of higher land known as *terra preta*. There are innumerable lakes, many of great size, countless *igaripes* and *parana-meris* or water courses which connect the various rivers, but never any high hills or great elevations until far north near the boundaries of Brazil. The greater part of the soil is alluvial, though there are sandy plains and rocky formations. No road or path of any kind exists in the whole of this immense extent of territory and the only communication is by way of the water.

The evaporation is very great and in the woods the air is generally surcharged with moisture. The rainy season begins in December and continues until June, the rain at times falling continuously in a deluge. During the remainder of the year there is but little rain, but the air at night is always damp from the great condensation. The days are hot, the mercury often rising to 80° or 90° in the shade, and the nights cool, often cold, the thermometer sometimes falling to 55°. The annual rise of the rivers, as shown by marks on the trees, is from twenty to thirty feet.

It is under these conditions of temperature that the Amazonian Cattleyas grow. It must be remembered that Cattleyas are never found in the close, dark woods and never in pestilential localities. Orchids like a free circulation of pure air, and the Cattleyas often grow on the topmost branches of the immense trees in the full sunlight. They also never seek to cover or bury their roots, which run up and down the branches often to the length of fifteen feet, but always on the surface clinging close to the bark, but in large clumps the roots often wind round and round the dead roots and pseudo-bulbs of past years and make large masses, but these inner roots are all dead and these masses become the habitation of fire ants, a fact which does not add to the pleasures of Orchid collecting.

The Cattleyas thus experience a season of six months of constant moisture followed by six months of intense heat by day, during which they become very dry, but are every night refreshed by the copious condensation; the maximum and minimum of temperature in the shade being about 80°, rising to 120° in the sun, and about 55° at night. The nearer we approach these conditions in cultivation the nearer we shall be to success.

CATTLEYA SUPERBA.

This species has the most extensive distribution of any Amazonian Cattleya. It first occurs on the Amazon in the vicinity of Serpa a few miles below Manaôs, and we have plants from many localities nearly to the Peruvian boundary of Brazil. Northerly it extends into Guiana and countries bounding on the Spanish Main.

In habit the plants vary much, the pseudo-bulbs of some being short and club-shaped, of others very long and thin, much resembling those of *Cattleya amethystina*. The foliage also varies greatly from thick, dark, almost round, coriaceous leaves, to long, thin and light-green. The pseudo-bulbs bear two, rarely three, leaves, but the third leaf is at the expense of the flower, for such plants only bloom when they are very strong, but we have noticed that the flowers of all such are exceptionally dark in color. The flowers vary greatly in size and depth of color, but all are good. They generally measure four to five inches in diameter; the sepals and petals are of equal size, varying much in intensity of the deep rose-color, the lip varies from crimson to purple and is more or less marked with yellow veins, the base being white. The number of flowers on the spike is 1-2-3-5-7-or 9. In thousands of plants we never but once found four on a spike, and never six or eight.

The home of this species is in the trees of the *varzea* or flooded land, on the margins of the many lakes where there is constant moisture in the air, and generally where the plants have plenty of air, and free exposure to light and sun. It blooms from the young growth and requires very little rest, the new growth pushing as soon as the roots of the old growth are mature, and every growth gives a spike of bloom. With us it flowers every three months, and there is not a day in the year when we have not *Cattleya superba* in bloom. The chief bloom, however, is from December to May. The flowers last from two to three weeks in perfection and are deliciously fragrant.

If the pseudo-bulbs of this species are allowed to shrivel they rarely recover, and it takes years to re-establish the plants. It is not an easy species to transport, as it loses its leaves in the cases and the plants are thus much weakened.

Formerly this species was very plenty in the immediate vicinity of Manaôs. On the *varzea* land opposite the city between the Rio Negro and the Amazon, there is a lake where, a few years ago, the trees in the season of its bloom were a mass of rich purple from the abundance of this plant; now hardly a plant can be found there, owing to the rapacity of collectors. We have seen in Manaôs ox-carts full of *Cattleya superba* begging a purchaser at any price, but now very few are found near the city. From the immense extent of territory over which this species is distributed there is no danger of its becoming extinct, but every year it is more difficult to procure, and will command a higher price.

CATTLEYA SUPERBA SPLENDENS.

This variety is one of the most magnificent of Cattleyas. In general appearance the plants do not differ from the species, except that we have never seen one with a very long pseudo-bulb or thin leaf. Its habitat, mode of growth and time of flowering are all the same as those of the species. The difference lies wholly in the flowers. These are of great substance, very large, four to six inches in diameter; the petals and sepals are very deep rose, sometimes approaching purple, and expand perfectly flat; the lip is larger than in the species and of richer color; the yellow veins are very broad and bright and sometimes extend to the edge of the lip. The fragrance is far richer than in the species and the flowers last longer in perfection. We have never seen more than five flowers on a spike. The true variety is very rare; one may receive a hundred of the species and not find more than one or two of this variety. As far as our observation has extended, and we have given much attention to this subject, there is no locality where it abounds, but here and there plants are found over the whole habitat of the species.

CATTLEYA SCHOERDERI AND CATTLEYA LEEANUM.

Of these two, so-called species, we can give little positive information. They are said to be natural hybrids between *Cattleyas superba* and *El Dorado*, the former partak-

ing more of the nature of *superba*, the latter more resembling *El Dorado*. We have plants which have been pronounced *Cattleya Schoerderi*, but to us they seem only *Cattleya superba* with exceptionally thick foliage and pseudo-bulbs, and there seems no reason for elevating the plant to the dignity of a species. The flowers are only a large, light-colored *Cattleya superba*.

Since these two species were taken to England by a collector of the Messrs. Low, several collectors have been up the Amazon in search of them but have returned unsuccessful. There seems no reason why such natural hybrids should not exist, but until we have more evidence we prefer to consider the matter as questionable.

CATTLEYA LUTEOLA.

This plant, long known and with many synonyms and rare in cultivation, though not showy, is one of the most charming of Cattleyas. It is of dwarf, compact growth, the pseudo-bulb and single leaf seldom exceeding six inches in height; but though individual plants are small it can sometimes be found in great flat masses. We remember some years since, when living on the Middle Amazon, having a plant brought us as large as an immense door mat; it had been peeled off the trunk of a great tree like a sheet of moss. It was a puzzle what to do with such a plant, but finally we nailed it on to the back door of the house where it had shade and free air, and for months it was bright with its pretty yellow flowers.

The leaves are single, very dark-green and coriaceous; the flowers are produced on short peduncles and vary in number from one to eleven. The sepals and petals are of a rich primrose-yellow; the lip of the same color or veined more or less with deep red. The flowers measure two to two and a half inches in diameter and have a faint but not very agreeable perfume; they last in perfection many weeks.

This species is a most profuse bloomer, every pseudo-bulb giving flowers. Often the flower spathe will dry and give no flower at the usual season of bloom, but sooner or later the flower spike will come, thus much prolonging the blooming season if one has many plants. It blooms from December to April.

Cattleya luteola is found only on that part of the Amazon known as the Solimoes, being the five hundred miles between Manaôs and Tellé; it does not occur on the river Negro. It is a native of the *varzea* lands of both banks of the Solimoes, but, unlike *Cattleya superba*, it loves the shade and is found deeper in the woods, frequently on the trunks of the trees, but never in the dark swamps. It is of the easiest culture and is a very bright, attractive plant.

CATTLEYA EL DORADO.

This beautiful species comes from the river Negro. For richness and delicacy of color, beauty of form and exquisite fragrance, as well as for duration of flower, it leaves nothing to be desired. The varieties are innumerable, in fact scarce any two plants are alike in flower, and one may have as many varieties as he has plants.

The pseudo-bulbs are either long or club-shaped; the leaves one, rarely two, broad, dark-green and coriaceous; the length of pseudo-bulb and leaf varies from nine to twelve inches. The flower is produced from the young growth which, after blooming, sends out roots and matures the bulb. The plant then rests for some months when is from December to April. This species naturally grows and blooms at the beginning of the rainy season and rests during the dry, and even in Para where the air is always moist and the monthly rain fall heavy, they refuse to bloom at any other season.

In the type the flowers are rosy-white, the sepals generally narrower than the petals, the flower not expanding flat, the lip white or rosy, often tipped with purple and with a large yellow or orange blotch on the throat; the fragrance is that of *Narcissus poeticus*. Flowers one to seven on the spike, measuring four to five inches in diameter. In varieties the sepals and petals vary to very deep rose, the lip may be rose or very heavily tipped with purple of every shade; the blotch on the lip varies greatly in size and in color, from pale yellow to intense orange; the lip itself varies much in size and expansion.

CATTLEYA EL DORADO ALBA.

This variety resembles in growth the species and is found with both long and club-shaped pseudo-bulbs; when out of flower it is undistinguishable. Flowers one to four on the spike, measuring five to six inches in diameter; sepals usually much narrower than the petals, both pure lustrous white. Lip pure white with deep orange blotch tipped with deep purple and fringed. It differs from *Cattleya Wallisii* in having narrower sepals, a smaller flower, having purple on the lip and being of far larger habit. Blooms at the same time as the species. It seems to have no special habitat, but is found growing in the same localities as the species. In a hundred plants of *El Dorado* perhaps ten may prove to be of this variety.

CATTLEYA EL DORADO SPLENDENS.

This magnificent and rare variety differs from the species in being of stronger growth and usually has club-shaped pseudo-bulbs; the foliage is very thick and dark-green. The flowers, which are of great substance, measure six to seven inches in diameter. Petals very broad with sepals nearly of equal size, both clear rose; lip rosy, fringed, with deep orange throat, which color sometimes extends to the tip; petals, sepals and lip often tipped with rich purple, but in this the plants vary much. Flowers one to six on the spike, often lasting a month in perfection. Found in same localities as the species. In a hundred plants of *El Dorado* as taken from the woods one is fortunate if he finds two of this variety.

CATTLEYA WALLISII.

Plant far smaller in all its parts than *Cattleya El Dorado*; the pseudo-bulb is usually very short and club-shaped, but the plants vary much in this respect. Leaf rather long and narrow. Flowers one to three on the spike expanding six inches in diameter; sepals and petals almost equal, very broad; lip not fringed, pure white with intense orange throat; rarely the whole lip is deep orange with only a narrow edge of pure white; sepals and petals pure white.

This species is the most beautiful and rarest of the Amazonian Cattleyas, and the true species is very rarely met with. It is a native of the river Negro, usually on the higher land which even in extraordinary rises of the river is not overflowed, though we have met with it in the same localities as *Cattleya El Dorado*.

This species even in Para brings a very high price and we know of only a very few plants. The blooming season of this species and of all the varieties of *El Dorado* is from December to April, and in mode of growth they all resemble that species.

EDWARD S. RAND JR.

PARA, BRAZIL.

GARDENS NEAR LONDON.

After a few enjoyable rambles around London among good gardens, writes a correspondent of the London Garden I am pleased to see how the light is spreading, and how rich and tasteful the gardens of to-day have become. It is especially satisfying to see the deep and earnest interest now being taken in the finer phases of flower gardening, as at Wisley, Golder's Hill, or at Bickley, and more especially in the wider grasp which ladies particularly, and amateurs generally, are taking of the hardy flower question. The old twiddly-twirly bedding arrangement is being supplanted by a little of breadth and repose, and here and there one may find real culture in the garden. The wild gardens at Wisley and Miss Jekyll's dainty pleasaunce at Munstead are far before the sacred carpet bedding of our time.

Our garden flora was never so rich nor so varied as now; and although we have as yet much to learn, much has already been done. I am almost ashamed to say it, but one must needs speak out the bitter truth, that all this advance is due to the taste and enterprise of amateurs rather than to the exertions of their gardeners. Even although the prophet has been amongst us these twenty years or more, there are not ten gardeners in a hundred who know even the A B C of hardy flowers and their proper cultivation.

BANANA CULTURE IN HONDURAS.

Honduras is rapidly assuming importance among the larger countries in Central America. According to the Commercial Advertiser, it has increased fifty per cent. in population in the last ten years. The lands outside of the main towns are being bought from the government by citizens of the United States and by Germans. The object of these new settlers is to establish Banana plantations. The soil of Central America is peculiarly adapted to the growth of this fruit, which can be raised at what would seem to be a ridiculous expense. The market for Bananas in New York is good, and the sale of them pays a profit of about twenty per cent. The purchase of these lands has netted the government about $1,500,000 during the last year, and as it owns about 1,000,000 of acres, there is a fair prospect of its enriching itself within the ensuing five years.

Dahlias, especially the single varieties, are easily grown from seed sown in light, rich soil in a gentle hot-bed. When the young plants are about two inches high, transplant singly into small pots, keep in a cold frame, harden them off gradually, and transplant to the open ground towards the end of May.

The vigilant man watcheth for young weeds to destroy them, even as a Herod for young children.

Exhibitions & Societies.

AMERICAN INSTITUTE FARMERS' CLUB.

PEACH CULTURE.

The meetings of this Club, which are held every 2d and 4th Tuesday afternoon of each month at the Cooper Union, New York, are always interesting and enjoyable. At a recent meeting Mr. J. T. Lovett of Little Silver, N. J., read the following paper, which is so full of solid, practical information, and at the same time, given in so condensed a form, that we print it in full:

So many owners of farms in the vicinity of New York are endeavoring to learn to what purpose their land may be devoted so as to yield profitable returns, it is quite surprising that so few engage in Peach culture. First, because the returns from a successful Peach orchard are so great; secondly, because a Peach farm can be managed so easily by the owner, who is perhaps engaged in other pursuits in the city; requiring very little attention or looking after by him except during the shipping season, when the orchard has arrived at bearing age. Should the owner of a garden plant twelve Peach-trees each season, of good varieties, and give them the simple culture required, he and his family could revel in Peaches for a season of three months.

SOIL.

The Peach is a native of Persia, hence it is obvious that it requires a warm soil; in fact, it will be useless to plant Peach-trees upon soil where the water stands near or upon the surface. If not well drained naturally it must be drained artificially. The best soil for Peaches is a sandy loam, not highly charged with vegetable matter.

PLANTING.

In planting Peach-trees, early spring is much the best season, although they can be planted in the autumn with success, providing proper care is observed, viz.: that the roots do not become frozen before they are placed in the soil, and a mound of earth about a foot in height placed at the base of each tree to prevent swaying. Plant no deeper than the trees stood in the nursery and make the soil very firm. The distance to plant depends somewhat upon the character of the soil. On a light, sandy, porous soil a distance of fifteen feet each way will be far enough; while on the other hand, should the soil be sandy loam or quite loamy, eighteen or twenty feet apart each way will be none too far. I usually plant eighteen feet apart each way, requiring one hundred and thirty-four trees per acre.

PRUNING.

Perhaps no other fruit-tree suffers so much from neglect of pruning, both at the time of planting and in after years, as the Peach. This is owing not only to the fact that the Peach requires annual pruning—more than almost any other fruit-bearing tree—but also because no other fruit-tree receives so little or is so often neglected. In planting, all side branches should be cut back to within a few inches of the main stem—the main stem being severed at about two-thirds of the distance from the ground. Small trees should be pruned to a whip, cutting back the stem very nearly one-half the way to the ground. In order to produce what is known as the bush form—a system followed by many successful Peach growers—sever the main stem from twelve to eighteen inches from the ground, causing many shoots to be produced near the earth. Subsequent pruning consists of an annual cutting back of the main branches, forming a symmetrical contour, and a judicious thinning of the branches.

CULTURE.

Nothing can be more simple than the culture required by the Peach. It is simply to keep the surface always mellow and free of weeds. In other words, it needs only the culture that one would give Corn. For the first two years after planting, hoed crops may be planted between the trees with advantage; after which time they require the entire strength of the soil. Grain crops of all kinds are very injurious, and it is rare that Peaches will succeed in sod or grass. In making the annual plowing in spring, it is well to use a light plow, plowing very shallow, that the roots may not be mutilated or disturbed. In keeping the surface mellow and free of weeds, I have found nothing so admirable and rapid in performing the work as the Acme Harrow; although any implement that will produce the desired result can of course be used.

FERTILIZERS.

As is well known the Peach is a heavy feeder of potash, hence potash should be supplied in some form. I prefer unleached or live wood ashes for this purpose to anything else, provided they can be had at a satisfactory figure, namely, 30 to 35 cents per bushel, delivered. I have also employed muriate of potash with good results. I prefer to apply broadcast always in spring, and harrow in. The Peach also demands a liberal supply of phosphoric acid. This is to be obtained in its best and cheapest form in pure ground bone, or at least I have always had good success from using this fertilizer. I do not recommend using stable manure for the Peach, the tendency being to produce an undue leafy growth, rendering the trees unproductive and more susceptible to injury in winter.

ENEMIES AND DRAWBACKS.

The chief enemies of the Peach are the grub or borer, and that terrible scourge, the yellows. The former is easily overcome. All that is necessary is to examine the bodies of the trees early in the spring and extract the grubs with a sharp-pointed blade of a knife. They will be found just beneath the surface of the soil, and their presence will be readily detected by the gum formed from the exuding sap. As a preventive of the borer, place at the base of each tree a shovelful of slacked lime or several of coal ashes.

The yellows, which has proved so disastrous to Peach culture in many parts of the country, has recently been, I think, conclusively demonstrated by Prof. Burrell and Prof. Goessmann to be the result of a fungus, and since the disease—if such it can be termed—is understood, I think we can handle it successfully. Many trees supposed to have the yellows are not in reality affected with the disease, their sickly appearance being the result of improper nourishment in the form of potash and phosphoric acid. I have known trees that were affected with the yellows *in reality* which were restored, not only to vigor but also to fruitfulness, by a liberal application of muriate of potash and severe pruning. These are the only remedies that I have to offer, and I am thoroughly convinced they are the only ones necessary to battle with this dire enemy.

The great drawback to Peach culture in the vicinity of this city and northward, however, is the killing of the buds in winter. As many are aware, prior to the winter of 1881-82, Peach buds were not injured to any extent throughout the Hudson River district and southward for a period of at least ten years; but since then they have been injured to a greater or less extent each winter. But this is no reason why they should be injured in the future. Were it not for this one risk Peaches would soon be grown so largely that the producers of even the finest crops would not find them profitable. We must take the risk to secure the gain.

VARIETIES.

In planting for market a great mistake is often committed by selecting an extended list of varieties. The varieties of Peaches for profit that can be counted on the fingers of one hand, are worth more than all the others combined; further, in marketing it is necessary to have a number ripening at one time, that they may be gathered and shipped economically. With the amateur planter the case is different. He may consider it desirable to have a number of sorts, both to extend the season to its full limits, and also for the sake of variety.

Were I confined to a single variety it would be that grand old sort Oldmixon Free, often termed "Old Reliable." As the three best varieties, all things considered, I would name Mountain Rose, Oldmixon Free and Crawford's Late, ripening in the order named. Were I to add two others they would be Amsden's June, or Alexander's Early, ripening in advance of the preceding, and Stephen's Rareripe—succeeding them all. As the best and most profitable entirely white Peach I would name Keyport White. The best of all clingstones is that large and beautiful sort, Heath Cling, especially valuable for making "Brandy Peaches."

There are many other desirable and profitable varieties, such as Beers' Smock and Bilyeu's October—both of which ripen very late; Crawford's Early and Foster—two large and beautiful yellow flesh varieties, ripening in midseason; Mrs. Brett and Lord Palmerston, perhaps the most beautiful of all Peaches and as delicious as they are handsome; Stump the World, ripening immediately after Oldmixon Free and very similar to it in all respects; Ward's Late Free, also similar to the Oldmixon Free in a general sense, but ripening a month later. For canning, the yellow-fleshed Peaches are preferable, among the best of which may be named Crawford's Early, Crawford's Late and Beers' Smock, ripening in the order named. Especially hardy varieties — that pass the winters with most impunity — are Crawford's Early, Jacques' Rareripe, Hill's Chili or Jennie Lind, Stephen's Rareripe, Mrs. Brett and Pratt.

MASSACHUSETTS HORTICULTURAL SOCIETY.

Special correspondence of THE AMERICAN GARDEN.

The Spring Exhibition of the Massachusetts Horticultural Society, which opened March 19th, and continued until Friday the 20th, was without question the best ever held in Boston, and in fact in no other part of the country has such a varied and rare lot of spring flowers been gathered together in one hall for exhibition.

Outside, the temperature was continuously below freezing, and had it not been for this fact, the hall would have failed to hold all the exhibits which were promised. About ten thousand persons visited the show, and the crowd was so great that on several occasions admission was denied to those in waiting until the hall could be cleared.

At the entrance of the hall was a stand of forced Roses and Azaleas from Mrs. Francis B. Hayes, the central specimen being *Rhododendron Veitchianum lævigatum*, with great, fragrant flowers of the purest white. Among the Roses was a fine plant of Paul Neron, with flowers of extraordinary size.

Next to this stand was a low platform fifty-five feet long and six feet wide, with an elevated center devoted mainly to spring-flowering bulbs, the display of which was far superior to any ever made before, and next to the Orchids constituted the glory of the show. Hyacinths, Tulips, Narcissi, Jonquils, Crocuses, *Anemone coronaria*, Lilies of the Valley, were shown in the finest specimens of the newest varieties, and in bewildering profusion, like the most brilliant bed in the flower garden filled with the choicest selection of plants. Besides the bulbs there were graceful and delicate wreaths, fragrant Violets in pots, Primulæ and Pansies on the plants, far more attractive than the cut-flowers in flat dishes.

The most notable Narcissus was the new "Sir Watkin," a gigantic form of *incomparabilis*. This and *Poeticus ornatus* attracted much attention, together with the "Tenby Daffodil" or *N. obvallaris*. The latter is a compact and beautiful Narcissus. All were shown by Edw. L. Beard, who also had a collection of Cyclamens, the finest type ever shown, of compact habit, brilliant colors, and bearing immense flowers. On this center platform were grouped not less than a thousand pots of every conceivable form of spring flower, forming a sight to be long remembered when once seen.

At the end of the hall, grouped upon the platform with a backing of tall Palms, Ferns, etc., were the Orchid collections, embracing about one hundred plants, many of them unique specimens. F. L. Ames of No. Easton exhibited *Dendrobium Ainsworthii*, with over 150 flowers; *Phalænopsis Brymerianum; P. Stuartiana; Cattleya Amethystoglossa; Dendrobium Brymerianum;* several magnificent plants of *Odontoglossum Alexandræ* and *Pescatorei*, one of the latter bearing sixty flowers on one spike; *Dendrobium Wardianum album*, besides several huge plants of the type; *Odontoglossum triumphans*, with an unequalled spike of bloom, and many others of rare quality and large size. H. H. Hunnewell exhibited a plant of *Coelogyne cristata*, *Chatsworth var.*, three feet across and a sheet of flowers; *Phalænopsis Schilleriana*, several extra good varieties of this being shown, one plant with about 75 flowers open; *Cymbidium Lowi; Odontoglossum Insleayi; Calanthe Turneri;* a fine plant of *Dendrobium Wardianum; Sophronites grandiflora;* besides numbers of others. David Allen, gardener to R. M. Pratt, exhibited about a dozen grand plants of *Dendrobium Wardianum*, most of them bearing from 40 to 60 flowers. He also staged a plant of *Dendrobium Ainsworthii* well-bloomed, and one of the finest plants of *Cypripedium insigne* ever put on exhibition. It was about four feet across. The Orchids were interspersed with Ferns and brilliant Anthuriums, constituting a display rarely seen.

A gratifying feature of the exhibition was the award of the Society's Silver Medal to F. L. Harris, gardener to H. H. Hunnewell, David Allen, and W. A. Robinson, gardener to F. L. Ames, for Skilful Culture of Orchids.

The Botanic Garden at Cambridge through W. A. Manda, its gardener, exhibited forced herbaceous plants, including *Lilium tenuifolium*, *Primula Cortusoides*, *Trillium grandiflorum* and *Doronicum Caucasicum*, the latter very bright and showy.

Jackson Dawson of the Arnold Arboretum showed fine and well-bloomed plants of Hybrid Perpetual Roses on the Japanese stock and an interesting collection of hardy Primulas and Polyanthi in pots, besides forced *Kalmia latifolia*.

Jno. B. Moore took the first prize for 24 cut blooms of Hybrid Perpetual Roses, which were even finer than his magnificent June flowers, which for three years have taken the challenge vase. A magnificent bloom of white Baroness took the first prize for single blooms. This promises to be a finer Rose than Merveille de Lyon.

The Pansies in pots and also cut blooms from Denys Zirngeibel attracted much attention, the strain being one of the best in the country. Cut Carnations were handsomely shown, J. A. Foster having a fine lot including seedlings, shown naturally with their foliage. Tea Roses and Hybrid Perpetual Roses were staged in great profusion, Delay and Meade taking a number of prizes for tender varieties.

The major portion of the prizes for Hyacinths were taken by C. M. Hovey, C. H. Hovey & Co., and Jno. L. Gardner. The latter represented by that veteran, C. M. Atkinson, took first prize for 12 with the following:—La tour d'Auvergne, Laurens Koster, Princess Dagmar, Obelisque, Sir Jno. Laurence, Snow Ball, Chas. Dickens, Alba maxima, Argus, L'incomparable, La Grandesse, Czar Peter. The first prize for six Hyacinths was first awarded to E. L. Beard, who was subsequently disqualified on account of duplicates, and then awarded to C. M. Hovey. The best single spike was Czar Peter, shown by C. H. Hovey & Co. The first prize for the best display of hardy Narcissi was given to E. L. Beard, and the three prizes for best general display of spring bulbs went respectively to C. M. Hovey, C. H. Hovey & Co., and E. L. Beard.

Last but not least were the Azaleas, where the veteran Marshall P. Wilder and Arthur W. Blake, a new contributor, divided the honors, Mr. Wilder filling a platform with fine, large old specimens, and Mr. Blake contributing a collection of young plants of the newest varieties, among which La Flamboeau was of most intense color. Had it not been for the intense cold, the display in this class would have been grand.

Mr. Moore exhibited a plant of the new Hybrid Perpetual Rose, Col. Felix Breton. This is the darkest Rose ever shown of good habit, promising well for freedom of bloom and very fragrant. It was awarded a certificate of merit.

These exhibitions have grown so, both as to the number of visitors and exhibitors, that the society finds its facilities severely taxed. An indication of this may be noted from the fact that more people visited the Spring Exhibition this year, than during the entire five years previous to 1883, with exception of the year when the American Pomological Society held its session here.

E. L. BEARD.

NEW ORLEANS MEETING OF THE AMERICAN HORTICULTURAL SOCIETY.

Mindful of my promise to send a report of this meeting, for THE AMERICAN GARDEN, I must beg pardon for the delay. I have had so much to do and see, and being on the wing so much of the time, I have not been able to get at my notes and write them out. With this preface I get to business.

From the scope of territory embraced in the membership of the society, and the topics and subjects treated, it was deemed advisable to change its name and give it a more expressive character. It will therefore be known hereafter as

THE AMERICAN HORTICULTURAL SOCIETY.

It was thought by some present that this action might be construed as aiming to supersede the mission of the American Pomological Society, but from what I could learn from those who are members of both organizations, such an idea has no existence in their minds, and they repudiate as unjust any insinuations of the kind. The field is broad and the harvest abundant for both organizations, and they hope to work together, hand in hand, strengthening and encouraging each other.

The meetings continued eight days, and the subjects treated, together with the wide area of territory embracing the homes of the members, show conclusively the propriety of adopting a more significant and comprehensive name than the "Mississippi Valley."

The following programme as carried out will show the variety of subjects treated and the area of territory levied on.

Fraternity in Horticulture, Mo.; Association in Horticulture, Mich.; Our Native Grapes, Ohio; Landscape Improvement of Country Homes, Ohio; Cross Fertilization, Tenn.; Success and Failure, Wis.; Our Popular Fruits, N. J.; Hybridizing and Crossing, N. J.; Pruning and Training the Vine, N. J.; Fungoid Diseases of the Strawberry, Ills.; Horticulture in Civilization, Miss.; The Native Grapes of the U. S., Tex.; Nomenclature of Russian Fruits, P. of Q.; Insect Notes of Interest to Fruit-growers, D. C.; Cranberry Culture, Conn.; The Indigenous Potatoes of America, Cal.; Tropical Horticulture, Jamaica.

These were all treated by the authors in person, and several other papers remained in the hands of the secretary and will doubtless appear in the forthcoming report. From the above it would seem there were abundant reasons for the change; whether a

wise one or not time will show. And right here let me say to the readers of THE AMERICAN GARDEN, that a remittance of $2 to W. H. Ragan, Secretary, Greencastle, Ind., will secure the report when published and in addition a copy of the last report, a volume of nearly 300 pages, fully worth the entire investment. Promptness in this matter will not only determine the size of the forthcoming edition, but the fullness and value of it, and who would not desire and appreciate so valuable and permanent a souvenir of the greatest exhibition the world has ever seen? It will possess a permanent interest and value for all horticulturists in this country.

I could not convey to the reader any adequate idea of the value or contents of these papers and the discussions, were I to attempt it, neither would your columns admit of so doing. No mere synopsis could do the subjects or their authors justice, nothing short of the full text will have a satisfying effect.

In all my experience with meetings of this kind held in connection with exhibitions, the inducements for attendance by the latter have always operated detrimentally to the former to some extent, and this occasion was no exception. Everyone in attendance on occasions of this kind must see the exhibition and then compare and discuss the merits or demerits of the different exhibits and samples before them.

There is also always more or less committee work to do, and this always draws perceptibly on the members, thus causing enforced absence in one case and voluntary absence in the other. Added to these difficulties, is often unsuitable and noisy places for the meetings, rendering hearing difficult. This meeting was no exception. The frequent tramping on the bare floors of the corridor and the constant hammering of the mechanics and laborers in preparing and mounting the exhibits adjacent to the room of meeting, together with the frequent chiming of the bells, rendered hearing absolutely out of the question a few feet from the speaker. After a committee failed to find better quarters, and appeals to the professor of chime music met deaf ears, the President mastered the situation by inviting to and offering the use of his parlors for future meetings. This proved to be a happy solution of the difficulty, and other societies similarly afflicted are cordially invited to apply the same remedy. I have great faith in its efficacy, and the warm, social feeling that will follow will by no means be the least advantage attending the results.

At one of the sessions the death of our dear old friend and co-laborer Chas. Downing was announced, and the society took immediate steps to put on record their estimate of his life and services by the adoption of suitable resolutions.

The claims of several places for the next meeting of the society were duly presented and discussed, the matter being finally left to the executive committee.

The officers elect for the ensuing year are Parker Earle, Cobden, Ill., President; T. V. Munson, Dennison, Tex., 1st Vice President; W. H. Ragan, Greencastle, Ind., Secretary; J. C. Evans, Harlem, Mo., Treasurer; with Vice Presidents from each State and Territory. E. WILLIAMS.

Miscellaneous.

The care of roses brings roses to the cheeks.

EASTER FLOWERS.

There is no time during the year when flowers are in such extraordinary demand, and the ingenuity of florists is so taxed, as at Easter tide, when the most refined and beautiful of God's creations are sought to express the highest and holiest sentiments. The fairest flowers are forced for the Easter celebration, which takes place at a season when Nature so generously assists the plantsman that the perfection of growth is obtained.

With marked accuracy skilled growers are able to time their plants to bring in a superb crop of bloom at Easter. White flowers are in the largest demand, although this season there has been an innovation to the usual rule, and rich effects have been wrought by the introduction of red Roses on the altars, and in memorial designs, that heretofore have always been decorated with pure white blossoms.

The admirable and interesting class of dusky Roses, some of which are nearly black, so deep is their crimson, cannot be successfully developed before Easter. They will not get the color desired if forced too rapidly. This year they are one of the loveliest features of the Easter flower market, and the cream of the superb Rose crop. La Rosarie has a larger flower than General Jacqueminot and is a shade deeper in color; Abel Carriére is dusky, velvety, and has a fiery heart; Xavier Olibo is almost black, and Eugene Appert is very deep in color, and its petals are like plush; Jean Liabaud is a glowing crimson; Louis Van Houtte and Prince Camille de Rohan are both very dark, and Senateur Vaisse is large and dusky. Of all these deep-colored Roses, Fontenelle is considered the richest; when on the bush it seems to fairly vibrate.

"I plucked the flower and held it to my ear,
And thought within its fervid breast to hear
A smothered heart beat, throbbing soft and low."

AMARYLLIS AND ASPARAGUS TENUISSIMUS.

Besides the dark Roses, Amaryllis with their gorgeously pencilled throats have been used among the plants on the altars. *Passiflora rubra* with its crimson flowers was especially suitable for Easter decoration, and was most gracefully festooned around memorial windows.

Lapageria rubra was also employed in decorations and was very elegant combined with *Asparagus tenuissimus*. The latter vine is now grown in lengths to make it useful for large decorations: it bestows a lovely laciness wherever it is twined: mounds of it are made over wire frames, which are charming pedestals for specimen plants.

ALMONDS, AZALEAS, MARGUERITES.

Flowering Almond with its spicy scent was introduced into several of the large Easter altar designs. Massings of Azaleas which have a transparent and tremulous appearance that makes them exquisite when clustered, were used in profusion. *Astilbe Japonica*, bushes of *Marguerites*, and fine plants of *Deutzia gracilis* and *Erica gracilis alba* were among the galaxy of bloom that greeted the eye Easter morning.

EASTER LILIES.

The Easter Lily crop was a handsome one. There were *Lilium longiflorum*, *L. Harrisii*, *L. candidum*, and *Callas*, all of which were brought to the shops hooded with cotton batting to keep their cups fair. The plants sold at various prices, about 50 cents for each flower being charged. Besides providing for church decorations, a great number of institutions and private parties had to be supplied, for everyone wants Lilies at Easter.

Lilies of the Valley were in enormous requisition for gifts. The loveliest baskets of these, combined with Snow Drops and clusters of white Forget-me-nots, were ordered for tokens of remembrance.

STOCKS, HYDRANGEAS.

White Stock Gillies are forced in great perfection this spring, and were very handsome placed among the rich tinted Wall-flowers, which were brought in to swell the Easter display.

Hydrangeas were among the handsomest specimens in blooming plants. *H. Otaksa*, *H. Hortensia* and *H. Hoggii* with their grand panicles, were conspicuously elegant, both in the churches and in decorations for private entertainments.

DINNER-TABLE DECORATIONS.

A large number of Easter Sunday dinner-parties were given, when the display of flowers on the table was beautiful and suggestive. A bed of Lily of the Valley would be placed in the center, and surrounding this would be Callas with their spathes filled with long stem Bon-Silene buds. At each plate a bird's nest containing confectionary eggs stood on a cluster of Lily of the Valley blossom spikes.

The prevailing style of dinner-table decoration this month is to place long stem Roses in silver dishes, or buds in the center, and to scatter Roses loosely around, to be taken by guests after the repast is finished. It is pleasurable to help one's self to the beautiful feast of Roses.

EASTER SOUVENIRS.

The boxes of cut-flowers sent for souvenirs Easter morning were marvelously lovely. Some of these contained only Violets, the clusters being laid so as to show the different shades, from the deep purple Czar to the pale Neapolitan, and then followed the tiny cluster of pink Violets, and below this, those white beauties of which the finest is the Swanly White. The latter has been very popular, one florist having sold over 2000 a week all through the season of two months' duration.

In every box was the hint of Easter in a spray of Lilies in one corner. There were boxes of Roses among Maiden Hair Ferns, and there were large clusters of kaleidoscopic Pansies ("For thoughts") which were fringed with Lilies of the Valley. "Blue boxes" were a feature among Easter floral gifts. These contained blue Daisies, Violets, Larkspur, Passion Flowers (*Passiflora incarnata*), Forget-me-nots, and Bluets.

STRAW BASKETS.

Since the introduction of colored straw baskets, "pink," "blue," and "yellow" favors have been fashionable for presents. Pink baskets are filled with Clover blossoms,

Polyantha "Mignonette" Roses, and Sweet Pea, on one side, and a large cluster of Gabriel Luizet Roses on the other. The yellow baskets contain Daffodils, *Acacia pubescens* and Maréchal Niel Roses.

Bleeding Heart, *Dielytra spectabilis*, was flowered extensively for Easter decorations, as was the old-fashioned Lemon Lily, *Hemerocallis flava*, with its trumpet form and delightful fragrance.

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Buffalo horns highly polished are the flower-holders of latest introduction: these are swung up by chains, and will hold a vial of water in which to place flower stems, or may be filled with soil and planted with vines. They can be arranged with graceful effect on chandeliers, or on center lights over the table. FLORA.

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The Peanut Plant, its Cultivation and Uses, by B. W. Jones. Published by the Orange Judd Co., New York. Every page of this pamphlet shows that it is written by one who is thoroughly familiar with his subject in all its bearings. The importance of the Peanut crop — already amounting to two millions of bushels annually — is so rapidly increasing that a work of this kind, giving in plain, practical language all the necessary directions for planting, cultivating, harvesting, marketing and much other interesting information, will be welcomed by all those living in the Peanut range, which, according to the author, extends over all the country having a growing season of five months exempt from frost.

A Brief of Horticulture in Michigan, by Chas. W. Garfield, Grand Rapids, Mich., Secretary of the Mich. Horticultural Society. This pamphlet of thirty-five pages forms a valuable and interesting contribution to our pomological literature, giving exact historical and statistical information about one of the most important fruit regions of our continent. From accurate data the author estimates the sales of Apples from Michigan the past season at 5,000,000 bushels, at prices ranging from $1.00 to $2.00 per barrel. The area in fruit is estimated at not less than 300,000 acres, and the planting, especially in Peaches and small fruits, is rapidly increasing this area. An excellent map of the State forms the frontispiece, and by referring to which the relative position, railway communications, water privileges, latitude, etc., may readily be observed as descriptions and statistics of the various localities are recited.

Begin to eat rotten apples and they will be all rotten before you get through the barrel.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

C. W. Dorr & Co., Des Moines, Ia., have consolidated the firm of Page & Kelsey.

R. & J. Farquhar & Co. have taken another brother into partnership, a Scotch seed grower of experience.

The new Snowball Mignonette illustrated in the March issue, is put out this year by Henry A. Dreer of Philadelphia.

E. C. Holmes & Co., Boston, have increased their business so rapidly that they have taken a new store at 32 Faneuil Hall Square.

The plant and seed trade generally seems to be large in volume and in number of orders, but the average size is much smaller than last season.

The Mapes Fertilizer Co., New York, have issued two large editions of their very interesting catalogue, and think they will have to issue a third.

Edward Cooper, for many years in charge of the general seed business of B. K. Bliss & Sons, has established himself at 63 Barclay Street, N. Y.

Warren H. Manning, son of Jacob W. Manning, the Reading, Mass., nurseryman, has taken up the business of laying out private grounds.

W. Atlee Burpee & Co., of Philadelphia, report a large increase in their trade over last year, and now employ more hands at shipping orders than ever before.

Jos. Breck & Sons of Boston last season sold over 2,000 bushels of the Pearl of Savoy Potato seed, and the outlook is good for much larger sales this year.

Cold weather and the very late coming of spring has put back trade, but all horticultural dealers seem hopeful of things "picking up" when the ground gets nearer the plow.

The Niagara White Grape Co. are having great success in distributing and selling their vines, if the number of nurserymen-agents, over 5,000, pushing the Niagara, is any criterion.

J. T. Lovett says the demand for the new extra early Blackberry, Early Harvest, is something "immense." Orders for it have already been received by him for nearly 200,000 plants.

The Bowker Fertilizer Co., show a fine record in an increase in their sales from 125 tons in 1873, to 24,876 tons in 1883, and 31,971 tons in 1884. A notable verdict of the farmers and gardeners upon the value of these manures.

The apparent success with which the Niagara is being introduced, will be an example to disseminators of new varieties in future. This is the most successful example on record of keeping the control of a plant in the hands of one party.

H. R. Bassler, formerly with B. K. Bliss & Sons, has formed a partnership with his brother at Manhattan, Kansas, for the raising of bulbs, seeds and plants. Their soil and climate appear to be remarkably favorable to the growing of bulbs.

James B. Kidd, favorably known to the former customers of B. K. Bliss & Sons, with whom he has been for many years, is now carrying on the Seed, Plant and Bulb business on his own account, at Grovesend, Essex Co., N. J. Mr. Kidd is a well informed seedsman.

Mr. Oliver Landreth informs us that he sees no prospect of a decline in the tariff on imported seeds, and thinks it ought to be greatly increased. It is natural for Mr. Landreth to take this ground as his firm are extensive seed growers. But the importers of Canadian seed Peas and foreign flower and vegetable seeds will not agree with him.

The old seed houses who refuse to acknowledge the competition of the younger men will get left in the race. The latter are now forging ahead and winning the laurels of large trade and success. The old must absorb new, young blood. Those that pursue this course gain the advantage of "old men for counsel, young men for war."

THE AMERICAN GARDEN PRIZES OF $1,000

For New Fruits, Flowers and Vegetables.

For the promotion of horticulture, THE AMERICAN GARDEN offers the following prizes of $100 each, or silver plate of equal value. No varieties now upon the market to compete. The fruits to be exhibited at the next two annual meetings of [illegible]

THE AMERICAN GARDEN PRIZES.

—ERRATA.—

Lines 5 to 9 read as below.

The Grapes to be exhibited at the next regular meeting of the American Pomological Society. The prizes to be awarded according to the judgment of a special committee in the autumn of 1886.

[illegible] and superior shipping and table qualities; $100 or plate.

For the best Gooseberry, - $100 or plate.

For the best Blackberry, - $100 or plate.

For the best New Fruit, - $100 or plate.

Particulars concerning the last three above-named, and the prizes for the Flowers and Vegetables, will be announced in our next issue, in order to give time for further careful consideration of the qualities desired, after consultation with leading horticulturists. We also reserve the right to modify the above conditions in such manner as may appear to be for the greatest benefit to American Horticulture.

We invite correspondence and suggestions on the above offers to the end of making them as useful as possible.

We shall make no claims or conditions whatsoever that would influence the naming or disposition of the prize-winning varieties.

The competition is open to North America.

GOOD FOR YOU.

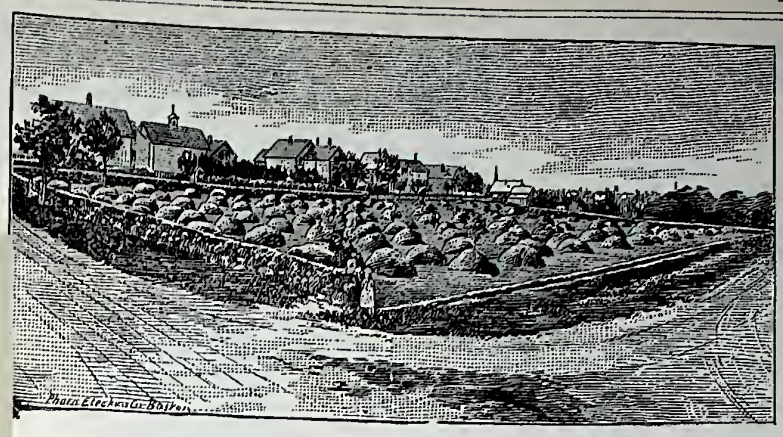
Subscriptions Now Come in Lively.

Hurrah! Hurrah!! Hurrah!!!

Our good friends have been so energetic of late that the opening spring sees us receiving about as many subscriptions as in the height of the season in January.

Thank you, Thank you. By your coöperation we have been enabled to improve the magazine in many ways. But we must have at least *twenty thousand more* subscriptions on our books in order to make THE AMERICAN GARDEN an assured success. Will *you* help us do it? The present garden-making time is the *best time in all the year* to induce your friends to let you send us their subscriptions.

We have received two issues of THE AMERICAN GARDEN under the new administration, and perceive a marked improvement in various directions. It is a well established illustrated monthly, entirely worthy of the patronage of all who are interested in horticulture.—*Dr. T. H. Hoskins, in Vermont Watchman.*



[illegible] above illustration is made from a photograph of a field of grass belonging to Mr. H. B. [illegible]rd, of Brockton, Mass., on which the Stockbridge Grass Fertilizer was applied. It [illegible] field in fairly good condition, but needing fertilizer. Two bags were applied to the [illegible] and the yield, as will be seen by the photograph, was very large; over three tons at [illegible]rst crop. The price of the Grass Fertilizer has been reduced, so that this year it only [illegible] from $4.50 to $9.00 to top dress an acre. Give it a trial. For pamphlets, address [illegible]er Fertilizer Company, Boston and New York.

[illegible]VE BRING GOOD LUCK

[illegible]all of The American Garden family of readers. Good fruit, good flowers, good vegetables, good gardens, good lawns, good health, good profits and good pleasure to all who read and act intelligently.

The Publisher's Corner.

THE AMERICAN GARDEN.

Subscription Terms.

To any address in United States and Canada, postpaid, one year, $1.00

Six months 60 cts., three months .30

To any foreign country in the Universal Postal Union and all British Colonies, postpaid, one year, $1.24

For $5.00 we send 6 copies one year.

For $7.50 we send 10 copies one year.

Subscriptions may begin at any time.

The magazine is not sent after subscription expires unless by special arrangement.

MAKING GARDEN.

Now that your friends and neighbors are "making garden" why not suggest to them that THE AMERICAN GARDEN would be a very efficient helper in their pleasant work? It would be a very easy matter for our friends to double the circulation and influence of this journal within the next 30 days by showing it to their friends and requesting subscriptions. If you only knew how much better we could make THE AMERICAN GARDEN with your coöperation, we think you would go and speak to all your friends about it right away.

ONE DOZEN MARLBORO RASPBERRY PLANTS,

Direct from the Originator,

VALUE $2.50.

FREE TO ANY SUBSCRIBER TO THE AMERICAN GARDEN,

Who will send us *one new* subscription at $1.00. For *two new* subscriptions, 24 plants, value $5.00. For *four new* subscriptions, 48 plants, value $10.00. For *eight new* subscriptions, 100 plants, value $15.00.

The price of the Marlboro Raspberry has varied as much as the price of Corn in Chicago. But now we think it is settled for this season, at 35 cents each, $2.50 per dozen, $15.00 per 100.

OUR OFFER OF THE NIAGARA GRAPE.

For our Subscribers Only.

We now withdraw our offer of the Niagara Grape, as given in the March issue. But so many desire a little more time in which to secure a vine of this valuable Grape, that we will send it on the terms named below, *during April only.*

We also continue our remarkable offer of the Marlboro Raspberry.

Just think of it!

One dozen plants of this fine new Raspberry (worth now at lowest retail price $2.50) as a *gift* from us in return for only the good word to your friend or neighbor necessary to secure his subscription!

Don't you want to start a plantation of this splendid Raspberry?

This offer remains open during April only.

For one *new* subscriber at $1.00, one dozen strong plants of the famous **Marlboro Raspberry** (price $2.50 per doz.).

For four *new* subscribers at $1.00 each, one strong plant of the **Niagara White Grape** (retails at $2.00).

This offer is **ONLY FOR OUR SUBSCRIBERS,** but,

Any person not a subscriber who wishes to take advantage of the above liberal offers has only to *add* his or her own name to the number required, and select a present for himself from **List 2** in the March *Garden.*

Surpasses our expectations.—*Northwestern Farmer and Dairyman.*

We have found it to be a *valuable* and interesting paper, and prize it most highly.—*G. B. Tulidge.*

THE AMERICAN GARDEN has been increased in size. It has no superior in the field it occupies.—*Hearth and Hall.*

I can see the improvement in THE AMERICAN GARDEN since it came into your hands. I wish you much success, as I would not like to do without it. —*H. J. Christison, Essex Co., Mass.*

I had decided not to renew my subscription, but it has improved so much in the short time you have controlled it, that I feel like continuing it and trying to get some of my neighbors to subscribe.—*H. Griffin, New London Co., Conn.*

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A leading feature of the number is a strong group of letters on the preservation of the Adirondack Forests, by a score of eminent public men.

Good Housekeeping. Messrs. Clark W. Bryan & Co., New York, and Holyoke, Mass., have made two decidedly "taking" periodicals in The Paper World and The Builder, and now attempt a still more ambitious venture in "Good Housekeeping," a new, illustrated, semi-monthly journal "in the interests of the higher life of the household." A felicitous title, a worthy aim, skilled conductors, able writers, perfect printing: with all these in union, an appreciative public will surely be found. Mr. Bryan has a happy method in journalism which is bringing him merited success in the accomplishment of great good among a wide range of readers in varied fields of action.

The Peanut Plant, its Cultivation and Uses, by B. W. Jones. Published by the Orange Judd Co., New York. Every page of this pamphlet shows that it is written by one who is thoroughly familiar with his subject in all its bearings. The importance of the Peanut crop — already amounting to two millions of bushels annually — is so rapidly increasing that a work of this kind, giving in plain, practical language all the necessary directions for planting, cultivating, harvesting, marketing and much other interesting information, will be welcomed by all those living in the Peanut range, which, according to the author, extends over all the country having a growing season of five months exempt from frost.

A Brief of Horticulture in Michigan, by Chas. W. Garfield, Grand Rapids, Mich., Secretary of the Mich. Horticultural Society. This pamphlet of thirty-five pages forms a valuable and interesting contribution to our pomological literature, giving exact historical and statistical information about one of the most important fruit regions of our continent. From accurate data the author estimates the sales of Apples from Michigan the past season at 5,000,000 bushels, at prices ranging from $1.00 to $2.00 per barrel. The area in fruit is estimated at not less than 300,000 acres, and the planting, especially in Peaches and small fruits, is rapidly increasing this area. An excellent map of the State forms the frontispiece, and by referring to which the relative position, railway communications, water privileges, latitude, etc., may readily be observed as descriptions and statistics of the various localities are recited.

Begin to eat rotten apples and they will be all rotten before you get through the barrel.

NOTES.

ITEMS THE SEED,

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Warren H. Manning, son of Jacob W. Manning, the Reading, Mass., nurseryman, has taken up the business of laying out private grounds.

W. Atlee Burpee & Co., of Philadelphia, report a large increase in their trade over last year, and now employ more hands at shipping orders than ever before.

Jos. Breck & Sons of Boston last season sold over 2,000 bushels of the Pearl of Savoy Potato seed, and the outlook is good for much larger sales this year.

Cold weather and the very late coming of spring has put back trade, but all horticultural dealers seem hopeful of things "picking up" when the ground gets nearer the plow.

The Niagara White Grape Co. are having great success in distributing and selling their vines, if the number of nurserymen-agents, over 5,000, pushing the Niagara, is any criterion.

J. T. Lovett says the demand for the new extra early Blackberry, Early Harvest, is something "immense." Orders for it have already been received by him for nearly 200,000 plants.

The Bowker Fertilizer Co., show a fine record in an increase in their sales from 125 tons in 1873, to 21,876 tons in 1883, and 31,971 tons in 1884. A notable verdict of the farmers and gardeners upon the value of these manures.

The apparent success with which the Niagara is being introduced, will be an example to disseminators of new varieties in future. This is the most successful example on record of keeping the control of a plant in the hands of one party.

H. R. Bassler, formerly with B. K. Bliss & Sons, has formed a partnership with his brother at Manhattan, Kansas, for the raising of bulbs, seeds and plants. Their soil and climate appear to be remarkably favorable to the growing of bulbs.

James B. Kidd, favorably known to the former customers of B. K. Bliss & Sons, with whom he has been for many years, is now carrying on the Seed, Plant and Bulb business on his own account, at Gravesend, Essex Co., N. J. Mr. Kidd is a well informed seedsman.

Mr. Oliver Landreth informs us that he sees no prospect of a decline in the tariff on imported seeds, and thinks it ought to be greatly increased. It is natural for Mr. Landreth to take this ground as his firm are extensive seed growers. But the importers of Canadian seed Peas and foreign flower and vegetable seeds will not agree with him.

The old seed houses who refuse to acknowledge the competition of the younger men will get left in the race. The latter are now forging ahead and winning the laurels of large trade and success. The old must absorb new, young blood. Those that pursue this course gain the advantage of "old men for counsel, young men for war."

THE AMERICAN GARDEN PRIZES OF $1,000

For New Fruits, Flowers and Vegetables.

For the promotion of horticulture, THE AMERICAN GARDEN offers the following prizes of $100 each, or silver plate of equal value. No varieties now upon the market to compete. The fruits to be exhibited at the next two annual meetings of the American Pomological Society. The prizes to be awarded according to the judgment of a committee at the annual meeting in 1886. Two years are required in order that the test may be of value.

For the best Grape which shall combine territorial adaptability and superior shipping qualities, with superior table quality; $100 or plate.

For the best Strawberry which shall combine territorial adaptability and superior shipping qualities with superior table quality; $100 or plate.

For the best Raspberry which shall combine earliness, productiveness and superior shipping and table qualities; $100 or plate.

For the best Gooseberry, - $100 or plate.
For the best Blackberry, - $100 or plate.
For the best New Fruit, - $100 or plate.

Particulars concerning the last three above-named, and the prizes for the Flowers and Vegetables, will be announced in our next issue, in order to give time for further careful consideration of the qualities desired, after consultation with leading horticulturists. We also reserve the right to modify the above conditions in such manner as may appear to be for the greatest benefit to American Horticulture.

We invite correspondence and suggestions on the above offers to the end of making them as useful as possible.

We shall make no claims or conditions whatsoever that would influence the naming or disposition of the prize-winning varieties.

The competition is open to North America.

GOOD FOR YOU.

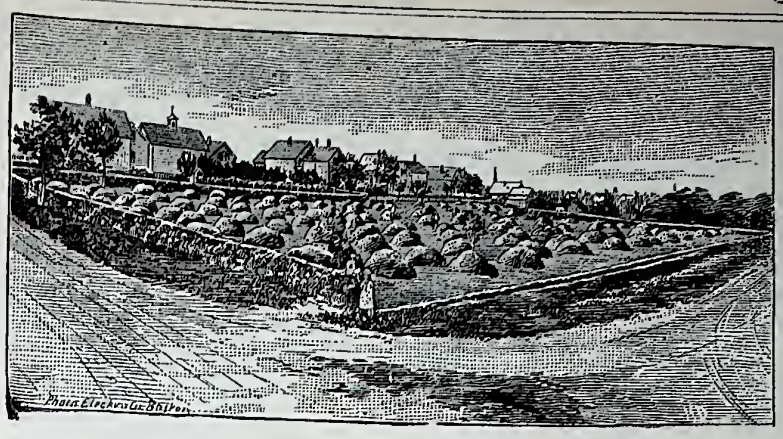
Subscriptions Now Come in Lively.

Hurrah! Hurrah!! Hurrah!!!

Our good friends have been so energetic of late that the opening spring sees us receiving about as many subscriptions as in the height of the season in January.

Thank you, Thank you. By your coöperation we have been enabled to improve the magazine in many ways. But we must have at least *twenty thousand more* subscriptions on our books in order to make THE AMERICAN GARDEN an assured success. Will *you* help us do it? The present garden-making time is the *best time in all the year* to induce your friends to let you send us their subscriptions.

We have received two issues of THE AMERICAN GARDEN under the new administration, and perceive a marked improvement in various directions. It is a well established illustrated monthly, entirely worthy of the patronage of all who are interested in horticulture.—*Dr. T. H. Hoskins, in Vermont Watchman.*



The above illustration is made from a photograph of a field of grass belonging to Mr. H. B. Packard, of Brockton, Mass., on which the Stockbridge Grass Fertilizer was applied. It was a field in fairly good condition, but needing fertilizer. Two bags were applied to the acre, and the yield, as will be seen by the photograph, was very large; over three tons at the first crop. The price of the Grass Fertilizer has been reduced, so that this year it only costs from $4.50 to $9.00 to top dress an acre. Give it a trial. For pamphlets, address Bowker Fertilizer Company, Boston and New York.

WE BRING GOOD LUCK

To all of The American Garden family of readers. Good fruit, good flowers, good vegetables, good gardens, good lawns, good health, good profits and good pleasure to all who read and act intelligently.

The Publisher's Corner.

THE AMERICAN GARDEN.

Subscription Terms.

To any address in United States and Canada, postpaid, one year, $1.00
Six months 60 cts., three months .30
To any foreign country in the Universal Postal Union and all British Colonies, postpaid, one year, $1.24
For $5.00 we send 6 copies one year.
For $7.50 we send 10 copies one year.
Subscriptions may begin at any time.
The magazine is not sent after subscription expires unless by special arrangement.

MAKING GARDEN.

Now that your friends and neighbors are "making garden" why not suggest to them that THE AMERICAN GARDEN would be a very efficient helper in their pleasant work? It would be a very easy matter for our friends to double the circulation and influence of this journal within the next 30 days by showing it to their friends and requesting subscriptions. If you only knew how much better we could make THE AMERICAN GARDEN with your coöperation, we think you would go and speak to all your friends about it right away.

ONE DOZEN MARLBORO RASPBERRY PLANTS,

Direct from the Originator,

VALUE $2.50.

FREE TO ANY SUBSCRIBER TO THE AMERICAN GARDEN,

Who will send us *one new* subscription at $1.00. For *two new* subscriptions, 24 plants, value $5.00. For *four new* subscriptions, 48 plants, value $10.00. For *eight new* subscriptions, 100 plants, value $15.00.

The price of the Marlboro Raspberry has varied as much as the price of Corn in Chicago. But now we think it is settled for this season, at 35 cents each, $2.50 per dozen, $15.00 per 100.

OUR OFFER OF THE NIAGARA GRAPE.

For our Subscribers Only.

We now withdraw our offer of the Niagara Grape, as given in the March issue. But so many desire a little more time in which to secure a vine of this valuable Grape, that we will send it on the terms named below, *during April only.*

We also continue our remarkable offer of the Marlboro Raspberry.

Just think of it!

One dozen plants of this fine new Raspberry (worth now at lowest retail price $2.50) as a *gift* from us in return for only the good word to your friend or neighbor necessary to secure his subscription!

Don't you want to start a plantation of this splendid Raspberry?

This offer remains open during April only.

For one *new* subscriber at $1.00, one dozen strong plants of the famous **Marlboro Raspberry** (price $2.50 per doz.).

For four *new* subscribers at $1.00 each, one strong plant of the **Niagara White Grape** (retails at $2.00).

This offer is **ONLY FOR OUR SUBSCRIBERS,** but,

Any person not a subscriber who wishes to take advantage of the above liberal offers has only to *add* his or her own name to the number required, and select a present for himself from List 2 in the March *Garden.*

Surpasses our expectations.—*Northwestern Farmer and Dairyman.*

We have found it to be a *valuable* and interesting paper, and prize it most highly.—*G. B. Tullidge.*

THE AMERICAN GARDEN has been increased in size. It has no superior in the field it occupies.—*Hearth and Hall.*

I can see the improvement in THE AMERICAN GARDEN since it came into your hands. I wish you much success, as I would not like to do without it.—*H. J. Christison, Essex Co., Mass.*

I had decided not to renew my subscription, but it has improved so much in the short time you have controlled it, that I feel like continuing it and trying to get some of my neighbors to subscribe.—*H. Griffin, New London Co., Conn.*

CATALOGUES RECEIVED.

John S. Collins, Moorestown, N. J. Price List of fruit plants and trees; also circular of the famous Comet Pear, for which this firm is headquarters.

J. T. Lovett, Little Silver, N. J. Guide to Fruit Culture. This is an elegant and handsome pamphlet, combining a descriptive and illustrated Catalogue of Small Fruit plants, Fruit-trees, etc., with a condensed manual of Fruit Culture. The assortment is unsurpassed, the descriptions are given with commendable clearness and veracity, and the directions are practical and reliable.

Ellwanger & Barry, Mount Hope Nurseries, Rochester, N. Y. Descriptive Catalogue of Fruits. A full assortment of all the best varieties. This firm is famous for its excellent stock. Industry Gooseberry, of which a colored illustration is given, a specialty. Also descriptive catalogue of Select Roses, with beautiful colored plate of their new seedling hybrid remontant Rose, "Marshal P. Wilder."

ADVERTISERS DO SAY

That The American Garden Pays.

Of course it does, because our readers are all progressive gardeners and well-to-do amateurs. The latest comments are these:

I know that THE AMERICAN GARDEN pays.
H. G. CORNEY, Cornwall-on-Hudson, N. Y.

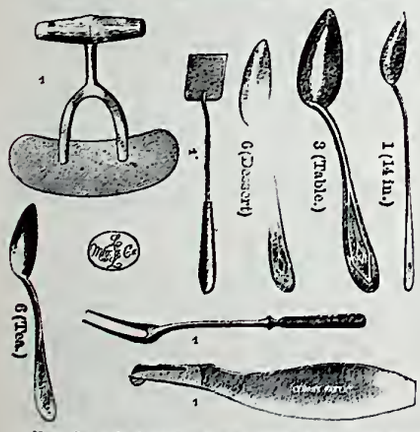
We have received a good many orders from our advertisement in AMERICAN GARDEN. One from the West Indies. Our advertisements have paid us well. W. W. RAWSON & Co., Boston, Mass.

We think THE AMERICAN GARDEN pays us well. BOWKER FERTILIZER CO., Boston and New York.

The liberal patronage of our advertising columns, and the increase in size of the individual advertisements, is in itself a favorable comment. No agricultural or horticultural journal in America has a larger or a better class of advertisements than this. None has a more intelligent and appreciative circle of readers.

TO HOUSEKEEPERS

20 GOOD KITCHEN UTENSILS



well made and of good material, mailed to any part of the United States, on receipt of $1.00.

The Ladies' Favorite Floral Set,

as below, 14 inches long, bronzed and polished; mailed as above on receipt of $1.00.

Both sets to one address for $1.75. A liberal Discount to any person who will send for 10 or more sets at once.

LYMAN & CO., Northampton, Mass.

ORCHIDS.

Write for our New Catalogue. It will give you practical hints on how to grow these beautiful plants. We are now making special offers, and have made selections of the different varieties to suit the taste of the buyer.

WE OFFER

12 CATTLEYAS,	12	kinds good plants, for	$12.00
12 LÆLIAS,	6	" " "	9.00
12 ONCIDIUMS,	12	" " "	9.00
12 DENDROBIUMS,	12	" " "	9.00

We have lately added to our collection **4,000 Established Orchids,** and from **3,000 to 5,000 Not Established.** If you want to buy good Plants as cheap as good Roses write to us, stating what you want, and what size of plant, and we promise to answer you by return mail. We grow to sell and only ask a trial.

Plants from Guatemala.

Our latest acquisition is the great exhibit of the Court of Guatemala at the New Orleans exposition, comprising over **7,000** large plants, among which are fine masses of *Lycaste, Skinnerii, Odontoglossum grade, O. pulchellum, majus, etc.*

It is safe to say that our collection is unequalled by commercial florists in America.

A. BRACKENRIDGE.

Established 1854.

ROSEBANK NURSERIES,

Govanstown, Baltimore Co., Md.

100 CHOICE BEDDING PLANTS for $5.00.

Do you want a token from the Nation's capital? If so, order a collection of the following splendid bedding plants, of which we grow and sell in Washington annually over 150,000 of only the very best kinds.

For any place where there is an express office, we advise sending them by express, as we thereby are enabled to send much larger plants, buyer to pay charges. Otherwise we send usually from two-inch pots, free by mail.

FOR $1.00 WE SEND:—Any 12 plants of the following sorts in varieties:—Begonias; Bouvardias; Carnations, monthly; Fuchsias; Lantanas; Pansy, finest, and Salvia splendens.

Any 15 of Alternantheras, Achyranthus, Coleus, Chrysanthemums, Heliotropes, Verbenas, Geraniums, double, single or scented, and white-leaved,—15 of above basket plants for $1.00.

Any 20, in varieties, of Petunia, single; Phlox Drummondi; Gladiolus and Tuberose bulbs, for $1.00. 12 Everblooming or eight hybrid Roses for $1.00. 100 plants in varieties, except Roses, $5.00.

N. STUDER, Florist, WASHINGTON, D. C.

WHITE INK.

LOVETT'S GUIDE TO FRUIT CULTURE

A veteran Horticulturist of the West writes: "Let me heartily thank and congratulate you on the perfect get-up of your Guide to Fruit Culture just received. As father of Western Grape culture, with nearly 40 years' experience; and as one of the first Nurserymen in the West, I have received and examined most of our best American Nursery Catalogues, and if there was an award to be given for the best you should have it. Again, you have dealt so fairly in describing the value of our most popular fruits, and particularly that noble fruit the Grape; stating the faults as well as the merits of the respective varieties, displaying the greatest fairness and knowledge." Guide to Fruit Culture mailed to all applicants with colored plates for 10 cents; without plates, 5 cents. Price-list free.

J. T. LOVETT, Little Silver, New Jersey.

A. H. MATTHEWS'

NEW SEED DRILL.

The Latest Improvement in Garden Seeders: made by the oldest manufacturer in the business; don't buy the old patterns when you can have the new at the same price. Also our "LITTLE GEM," never before offered, a reliable cheap drill at half the price of others. Send for circulars to manufacturers,

SMALL & MATTHEWS, Boston.

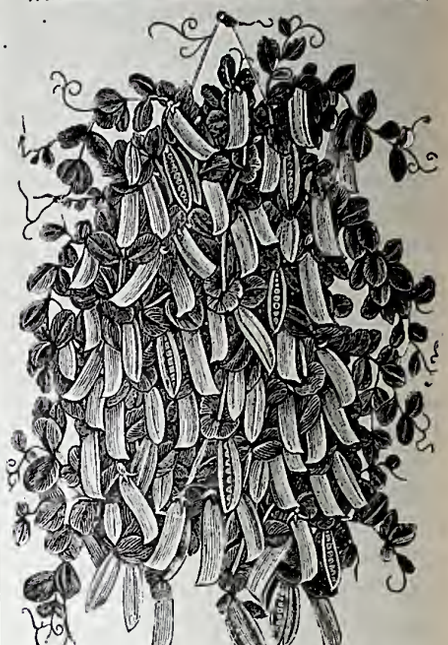
New Canna Brilliantissima.

This Canna originated with me in 1881. It is a hybrid between Annie Discolor and Pres. Faivre. It grows compact in hill; is tall; leaves long, narrow, lustrous metallic purple. For strong endorsement of Thomas Meehan, see October No. of "Gardeners' Monthly," page 294. It was awarded highest premium for "plant of merit" at Illinois State Fair, 1884. Sound sets will be sent by mail, guaranteed, at $1 each. Address, at WASHINGTON HEIGHTS, Ill., D. S. HEFFRON.

The Three Best Peas

For Successional Crop.

Warranted Original Headquarters Seed.



BLISS'S EVERBEARING PEA.

Bliss's American Wonder. The earliest, dwarfest and sweetest. Pkt., 10c., qt., 40c.; by mail, 65c.

Bliss's Abundance. One of the most productive and richest marrow. Pkt., 10c., qt., 75c.; by mail $1.00.

Bliss's Everbearing. This fine general crop pea continues longer in bearing than any other, retaining its delicious tenderness until the last picking. Per pkt., 10c.; qt., 75c.; by mail, $1.00.

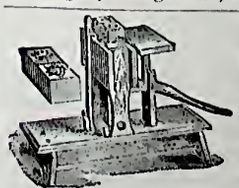
Special Inducements to Readers of this Paper.

We will send by mail, postage paid, one quart each of the above three new varieties of peas upon receipt of $2.50 in postage stamps, or money order; and in addition allow each purchaser to select Flower Seeds from our illustrated catalogue to the value of $1.00. This substantial offer is made with the view of introducing ourselves to the readers of this valuable horticultural journal, and at the request of its new manager. As it only stands good until our stocks are sold the necessity for taking early advantage of it is apparent. Our catalogue containing only "the best seeds" for farm and garden will be mailed free to all applicants.

A. D. COWAN & CO.,

P. O. Box 2541. 114 Chambers St., N. Y.

The houses of A. D. Cowan & Co., and W. H. Carson & Co., having been recently consolidated, the managing staff consists only of practical seedsmen, and comprises the following well known names: A. D. Cowan, formerly with B. K. Bliss & Sons, N. Y. W. H. Carson, formerly of P. Henderson & Co., and Thorburn & Carson, N. Y. Chas. G. Weeber, formerly with Jas. Fleming, N. Y. T. V. W. Bergen, seed grower, Bay Ridge, L. I.



Print Butter brings much higher prices than tub, therefore every dairyman should supply himself with a Printer and Shipping Boxes, so as to put it on the market in the most attractive form.

THE

NESBITT PRINTER

AND THE

Cooley Improved Carriers

are acknowledged to be the best implements for the purpose.

Send for Illustrated Circulars.

CATALOGUES RECEIVED.

Joslah Hawkins, Southport, Conn. A unique circular of Onion, Oats, Corn and Potato seed.

Parker & Wood, Boston. A large, handsome catalogue of seeds, implements and woodware.

Geo. Plumy, Sturgeon Bay, Wis. Circulars of evergreen and forest trees, and of seed Potatoes.

C. H. Thompson & Co., Boston. An attractive and well printed catalogue of seeds and implements.

Joseph D. Fitts, Providence, R. I. Catalogue of small fruit plants. Mr. F. makes Strawberries a specialty.

Bradley Fertilizer Co., Boston. A catalogue of testimonials from farmers on the high quality of their manures.

L. W. Goodell, Amherst, Mass., is a successful grower of flower seeds, of which he offers a choice list of the old favorites.

Stark Nurseries, Louisiana, Mo. Price list of root grafts, seedlings, surplus stock, etc. Also a description of the "Marianna" Plum.

John G. Burrow, Fishkill Village, N. Y., runs the Jefferson Grape as a specialty, and seems to be having considerable success with it.

Robert Scott & Son, Philadelphia. Descriptive and illustrated catalogue of Roses, new and old, with many illustrations and valuable cultural directions.

D. S. Hoffron, Washington Heights, Ill. Mr. H., well known as the introducer of new Potatoes, is a florist and nurseryman, and sends out a neat catalogue.

Gardner B. Weeks, Syracuse, N. Y., is the only maker of the widely used "grappling hay-fork." We know this to be an excellent apparatus, by experience.

Henderson's American Farmers' Manual, from Peter Henderson & Co., New York, is a showy catalogue of seeds for the farm, after the English style.

Luther Putnam, Cambridge, Vt. Circular of 200 kinds of seed Potatoes. Mr. P.'s stock took first prize at the State Fair in 1884, as the largest and best collection.

Fred. W. Kelsey, 208 Broadway, New York. Select List of new and rare trees, shrubs and plants. Japanese Maples, Rhododendrons, Azaleas, etc., specialties.

Jacob W. Manning, Reading, Mass. Descriptive catalogue of fruit, forest, ornamental and flowering trees and plants. Also catalogue of hardy herbaceous plants, ferns and shrubs.

Kissena Nurseries, Parsons & Sons Company, Flushing, N. Y. Select list from the descriptive catalogue of ornamental and fruit trees and shrubs, of this well known and reliable firm.

Geo. S. Josselyn, Fredonia, N. Y. Descriptive Catalogue of American Grape-vines, small fruit, etc. Many illustrations and colored plates of the famous Fay's Prolific Currant, for which this is headquarters.

Mapes' Complete Manures, 158 Front street, New York. Descriptive Price List of complete manures for special crops and general use, together with much valuable information about fertilizers and growing crops in general.

Chas. A. Reeser, Innisfallen Greenhouses, Springfield, O. Catalogue of one of the largest collections of Roses in the country. Also a full assortment of bedding and greenhouse plants, and vegetable and flower seeds.

E. D. Sturtevant, Bordentown, N. J. Catalogue of rare water Lilies and other choice aquatic plants, with directions for their culture. Mr. S. has made himself famous as a florist by his novel exhibitions of these choice plants.

W. W. Rawson & Co., Boston, though the youngest house in the trade (successors to Everett & Gleason), have issued the most elegant and beautifully printed catalogue we have yet seen. The descriptions of varieties are well written.

T. B. Everett & Co., Boston, are New England agents for many of the best implements of the day, such as the La Dow Harrow, and Eureka Mower, etc., and manufacturers of the Matthews Seed Drill. A view on the cover of their catalogue is a pleasant scene on Daniel Webster's

BEAUTIFUL FAIRY ROSES

From Japan, that Wonder Land of Horticultural Beauty.

Something every one can succeed with! Sure to give satisfaction! They bloom in immense clusters, 30 to 50 together on a single stem. The flowers are of singular purity, and resemble miniature camellias in their regularity. They are wonderfully beautiful and bloom constantly, and are entirely distinct from every other rose, and must become very popular. They are elegant, blooming as freely as a geranium, and require as little care.

4 beautiful sorts—MIGNONETTE, clear pink, the freest bloomer of all, each 20 cts. LITTLE WHITE PETS, very large, pure white; elegant, 30 cts. each. MAD'ELLE CECIL BRUNER, salmon blush; splendid, 20 cts. each. PAQUERETTE, pure white. Very free bloomer, 20 cts. each—strong plants. One each of the 4 sorts for only 75 cts.

Our collection of **CHRYSANTHEMUMS** contains all the best varieties of both American and European introduction, and cannot be surpassed if equalled. We send, postpaid, OUR GEM COLLECTION of *Chrysanthemums, 34 choicest sorts for only* $7.50. In selecting this set it has been our object to offer a set of Chrysanthemums that would embrace the widest range of color, each sort being distinct and elegant, so that those who wish to grow but few kinds, might be able to purchase the choicest and most desirable varities and be sure of getting something very fine and with a few get the most desirable. Full description of these together with the many other beautiful varieties in our collection in catalogue.

We wish we could convey in some small measure the extreme delicacy and richness of coloring of our **SET OF SUPERB NEW SINGLE DAHLIAS**, a marked improvement over anything that has ever before been offered, very fashionable, and these magnificent sorts will add greatly to their popularity. We were awarded prizes for these by the New York Horticultural Society; 12 beautiful varieties—strong plants—for only $3.50.

LILIUM AURATUM. *The Queen of Lilies.* Our importation from Japan, of this the most beautiful of the Lily family, is unusually fine. Large healthy bulbs, 40 cts. each; 3 for $1.00, 12 for $3.00.

Do You Want a Garden of Rare Beauty?

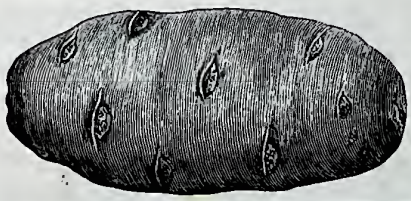
All those who want the gayest garden with the least trouble and expense, should not fail to *try our magnificent* **IMPROVED DOUBLE GADEN POPPIE** . They grow about 2 feet high, with magnificent large flowers, of the richest and most intense shades of color. They produce an effect that cannot be matched for brilliancy, perfectly dazzling. This grand show which we offer has been produced after many years of high cultivation. For brilliant, dazzling colors these Poppies are equalled only by the Tulip—13 beautiful colors—*White, White Striped Red, White and Light Purple, Rose Light Red, Scarlets and White, Dark Scarlet and Violet, Lilac and Scarlet, Dark Modore, Gray, Cinnabar and Violet, Black Brown and Cinnabar, Fiery Scarlet.* Seed of any color, per paper, 5 cts.—collection, 13 papers in all for only 50 cents. *Any of these articles sent postpaid, on receipt of price.* These together with many other attractions are freely described in our

PLANT AND SEED CATALGOUE

For 1885, which is very complete, handsomely illustrated, artistic, of particular interest to all lovers of *Choice Flowers*, sent free to all readers of THE AMERICAN GARDEN, enclosing stamp to pay postage.

F. R. PIERSON, Florist & Seedsman, P. O. BOX S. TARRYTOWN, NEW YORK.

BURPEE'S EMPIRE STATE POTATO,



Now offered for the first time, is decidedly **the best** and **most productive** Main Crop Potato ever introduced. It is strikingly beautiful; skin white and smooth; eyes shallow, but strong; flesh pure snowy white and of peculiarly rich and delicate flavor. Of vigorous growth, the tubers cluster compactly in the hill. It is enormously productive, having yielded at the rate of **nearly 600 bushels per acre**, and thoroughly tested along-side of the most popular varieties. **Burpee's Empire State** has, in every case, outyielded all others. Prices: peck, $1.50; bushel, $5.00; barrel, $10.00. By mail, 75 cts. per lb.; 3 lbs. for $2.00, post-paid. For full particulars, illustrations and testimonials, see **BURPEE'S FARM ANNUAL FOR 1885**, which will be sent **free** to any address.

W. ATLEE BURPEE & CO., Philadelphia, Pa.

A NEW DEPARTURE.

FLOWER and GARDEN SEEDS
Delivered in any part of the United States at catalogue price.

F. E. McALLISTER,
SEED MERCHANT,
29 & 31 Fulton St., NEW YORK.

Catalogues mailed on application.

READING NURSERY.

(ESTABLISHED IN 1854.)

Catalogues by mail free, describing over **1000 Shade Trees, Shrubs, Herbaceous Plants, Evergreen Trees, Large and Small Fruits.**

The proprietor has 38 years practical experience and 3 grown-up sons as assistants.

JACOB W. MANNING,
READING, - - - - MASS.

$30.00 IN PREMIUMS, will be given to successful competitors in growing the **BOUQUET GARDEN** A pleasing novelty. Price 15c. per pkt. CATALOGUES FREE. BASSLER & BRO., Manhattan, Kan.

Mention THE AMERICAN GARDEN.

W. E. Weld, Ingleside, N. Y. Price list of seed Potatoes.

Martin Benson, Swanwick, Ill. A circular on Fig Culture at the North.

Price and Knickerbocker, Albany, N. Y. A concise catalogue of seeds from an old and reliable firm.

James Kinsey & Co., Kinsey, O. Price List of fruit and ornamental trees and general nursery stock.

William Parry, Parry, N. J. Illustrated Descriptive Circulars of the valuable novelties introduced by the firm, viz.: Parry's Strawberry (with beautiful colored plate), Wilson Junior Blackberry, Lawson Pear.

PANSY Seed Establishment.

Grand Collection of all the latest and best varieties of Pansies. Separate and in Mixture. Strictly first-class seed *only*. Price List and "Essay on Pansies," *free*.

Address,

ALBERT BENZ, Douglaston, Queens Co., N. Y.

GEO. PEABODY and PYRAMID LIS Arbor Vitæ, RETINISPORAS and other Evergreen rooted cuttings, by 100, 1000, 10,000 or 50,000. MARLBORO and RANCOCAS Raspberry and other small fruit plants. Ornamental and Fruit Trees, Grape Vines, Asparagus Roots, etc. CHAS. B. HORNOR, Mount Holly, N. J.

FOR $1

WE WILL MAIL TO ANY ADDRESS the following splendid assortment of Seeds:—

1 pkt. Rawson's Early Arlington Celery	$0.25
1 oz. Dewing's Turnip Blood Beet	.10
1 pkt. Rawson's Early Summer Cabbage	.10
1 pkt. Stone Mason Cabbage	.05
1 pkt. Danvers Stump-Rooted Carrot	.05
1 pkt. White Spine Cucumber	.05
1 pkt. Boston Fine-Curled Lettuce	.05
1 pkt. Black-Seeded Tennisball Lettuce	.10
1 pkt. Scaly-Bark Watermelon	.10
1 pkt. Rawson's Cantaloupe Melon	.05
1 oz. Yellow Danvers Onion	.10
1 pkt. Long Smooth Parsnip	.05
1 pkt. Long Scarlet Radish	.05
1 pkt. French Breakfast Radish	.05
1 oz. Round Leaf Spinach	.10
1 pkt. Summer Crookneck Squash	.05
1 oz. Hubbard Squash	.10
1 pkt. Cardinal Tomato	.05
1 pkt. Purple-Top Flat Turnip	.05
1 pkt. Sweet German Turnip	.05
	$1.55

SPECIAL OFFER.

To every purchaser of the above we will mail our "*GARDENER'S GUIDE*," from which may be selected 50 cents' worth of *Flower Seeds* in packets, which will be mailed

FREE!

On condition that the purchaser names the paper in which this advertisement was seen.

W. W. RAWSON & CO.,
SEEDSMEN,
34 SOUTH MARKET ST., BOSTON, MASS.

Summary of Fortieth Annual Report.

NEW YORK

LIFE : INSURANCE : CO.

Received in Premiums,	$11,268,850.76
Received in Interest, Rents, etc.,	2,971,621.63
Total Income,	**$14,240,175.39**
Paid Death-claims,	$2,257,175.79
" Endowments,	873,808.50
" Annuities, Dividends, and for Policies Purchased,	3,603,970.85
Total Paid Policy-holders,	**$6,734,955.14**
New Policies issued,	17,163
New Insurance written,	$61,481,550.00
Cash Assets,	**$59,283,753.57**
Divisible Surplus (Co.'s 4 per cent. standard),	$4,371,014.90
Tontine Surplus (Co.'s 4 per cent. standard),	2,633,796.70
Total Surplus at 4 per cent.,	**$7,004,811.60**
Surplus by State Standard (estim'd)	$10,000,000.00
Insurance in Force,	229,382,586.00
Increase in Income,	579,124.73
Excess of Interest over Death-losses,	714,448.84
Increase in Assets,	3,740,850.85
Increase in Insurance in force,	30,636,543.00

A. P. CHILDS,

Gen'l Agent for Vermont and Western Massachusetts,

SPRINGFIELD, MASS.

World's Exposition at New Orleans.

Every Premium for *Long Keeping* Butter. Lot B, Class 1, was awarded to butter made by the Cooley Process. Also *First Premium* for Sept. or Oct. butter, Class 2, and the First *Premium* for Print butter.

Remember the *Cooley* has a *Patented Process*. Others imitate construction but cannot use the process.

Vt. Farm Machine Co. Bellows Falls, Vt.

SEEDS, SEEDS, SEEDS

The Oldest Established Seed House in New York invites attention to their

HIGH CLASS SEEDS

Send for Catalogues.

J. M. THORBURN & Co., 15 JOHN ST. NEW YORK.

NEW PERPETUAL PEA.

I was the first to introduce this from England last year, and on my trial grounds it proved superior to the Everbearing. It requires no bushing, of branching habit about 24 inches high; seed wrinkled; a wonderful cropper, strong and robust; foliage attractive; very desirable for family use and worthy of trial for market. Packet 15c, 4 packets $1.00.

I offer 30 other varieties of Peas mostly of my own growing, New Asparagus, Beans, Cucumbers, Cabbage, Celery, Corn, Dandelion, Melons, Onions, Potatoes, Grains, Squash, Turnips, Tomatoes and other prime NORTHERN GROWN SEEDS.

Strawberry Plants, Grape, Currant and other small fruit plants. Roses, Verbenas and thousands of other plants.

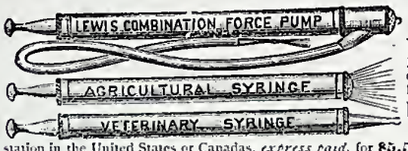
FLOWER SEEDS—My Pansies, Asters, Balsams, Pinks, Daisies, Hollyhocks, Mignonette, Primulas, Petunias, Sweet Peas, are among the finest in America.

Circular of Specialties sent free IF you mention AMERICAN GARDEN.

C. E. ALLEN, Brattleboro, Vt.

Attention Farmers! Fruit-Growers! Everybody!

DESTROY THE INSECTS AND SAVE YOUR FRUIT TREES!



—BY THE USE OF—

LEWIS'S COMBINATION FORCE PUMP

It makes Three Machines (see cut). Is made of brass throughout. It is the Best and Cheapest First-Class Hand-Pump In the World. It will throw a good stream of water 50 to 60 feet.

Unprecedented Success. My Agents Make $10 to $30 a Day.

To introduce it, I will send a Sample Pump to any express station in the United States or Canadas, *express paid*, for $5.50, regular price $6. I have the finest Spray Attachment ever put on a Pump—can change from solid stream to spray instantly *while pumping*. I also manufacture the Potato-Bug Exterminator separate—price zinc tube, postpaid, $1.25; polished brass, postpaid, $1.75; can do four to six acres per day. Send for Illustrated Catalogue, Price-List and Terms to Agents, etc. I give a long list of customers, (their names and addresses) each of whom has bought from $50 to $2000 worth of these goods in from one to three weeks' time and has made from $10 to $30 per day. Agents wanted everywhere. A Bonanza to those who secure unoccupied territory. Write at once. Exclusive control to good canvassers.

P. C. LEWIS, CATSKILL, NEW YORK

OUR GREAT SPECIAL OFFER SEEDS $2.75 —FOR $1.

Our Seeds are UNSURPASSED in the world. To prove their Great Superiority, and introduce them into thousands of new homes, we will send FREE by mail, on receipt of $1.00 (ACTUAL VALUE $2.75) OUR SPECIAL INTRODUCTION BOX OF SEEDS, containing 36 Large Packets of all the BEST, New and Standard VEGETABLES, making a complete family garden. For list of varieties, see our large advertisement in February number of this paper. 3 Boxes for $2.50. Our FLOWER COLLECTION comprising 10 Packets *Choicest Flower Seeds*, sent mailed for only postpaid for 25 cents in stamps. 5 collections, $1

$1,000 IN CASH PRIZES for best products of our Seeds in 1885—competition open to all. For particulars, see our Garden and Farm Manual, mailed Free.

JOHNSON & STOKES SEED WAREHOUSES Nos. 219 & 1114 MARKET ST. PHILAD'A, PA.

SEEDS! SEEDS!

If you want the BEST SEEDS for the LEAST MONEY, our catalogue will aid you to procure them, because it contains every thing good, both old and new, in the trade. Our long experience enables us to secure the best and most reliable stocks we offer, and it will surely pay you to buy of us. By sending us your address we will send you a catalogue free by return mail.

HOVEY & CO.,

16 South Market Street, - - - - Boston, Mass.

THE AMERICAN GARDEN fills a gap in horticultural literature.—*L. J. Templin, Colorado.*

THE AMERICAN GARDEN deserves a more liberal support than it has yet obtained, but under the new management we hope its sphere of usefulness will be greatly extended.—*N. Y. Sun.*

I like it very much, and always did.—*John Barker, Chairman Committee on Gardens, Mass. Horticultural Society.*

I have selected THE AMERICAN GARDEN and *The Rural* from among the many offered, AS THE BEST.—*M. L. McClane, Berrien Co., Mich.*

See my $5.00 List of SMALL FRUITS For Country Homes.

A remarkably liberal offer.—Also a large assortment of all the new and standard SMALL FRUITS and GRAPE VINES at popular prices. Illustrated Descriptive Catalogue free. Address

H. G. CORNEY, (Successor to)
Cornwall-on-Hudson, N. Y. (E. P. ROE.)

BEAUTIFUL EVER-BLOOMING ROSES!

Our choice *IMPORTED ROSE PLANTS* are two and three years old, and from one to four feet high. They will produce 20 to 40 flowers on each bush the *first season*. Only the best varieties are sent out, and all are carefully labelled. Directions for planting and treatment are sent with each order. The Roses we offer are those which florists buy to force for cut flowers for spring sales. They are far superior to the little things sent out by some dealers in two and four inch pots.

Prices: 10 strong plants, $1.50; 25 plants, $3.50; 50 plants, $6.50; 100 plants, only $12.00. Standard Tree Roses, $5.00 per doz. Send orders to

SCHULTHEIS BROTHERS, ROSE GROWERS AND IMPORTERS,
P. O. Box 78, COLLEGE POINT, L. I., N. Y.

GRAPE VINES OF OVER 100 kinds.

Nursery established 28 yrs. Delaware, Concord, Lady, Empire State, Niagara, Vergennes, Hayes, Early Victor, Lady and all the best, new and old varieties. Splendid stock. Prices low. Catalogues free.
GEORGE W. CAMPBELL, Delaware, O.

Seeds at Wholesale Prices.

40 pounds White Spined Cucumber. 35 pounds Yellow Danvers Onion (round). 6 bus. Setts, same Onion. 50 bus. Sweet White Flint Corn, 8 rowed; matures in less than 100 days. All grown at Houghton Farm, and warranted pure and true. Will be sold in small lots or entire, at wholesale market rates. Address.

HOUGHTON FARM,
Mountainville, Orange Co., N. Y.

POTATOES FOR SEED. Best Varieties, old and new. Lowest Prices. Send for Price List.

W. E. WELD, "Evergreen Farm,"
Mention American Garden. INGLESIDE, N. Y.

SIBERIAN ARBOR-VITÆ, 10 in., 12 in., 2 yrs., tpa.
HEMLOCK, 10 in., 12 in., 3 yrs. tpa.
NORWAY SPRUCE, 8 in., 12 in and 5 in., tpa.
Cheap in lots.
Also, NEW EVERGREENS, 8 in., to 12 in., tpa.
Send for list of prices.

I. BUTTERTON,
The Loudon Nursery, Hammonton, New Jersey.

SEEDS AND PLANTS.

Prices to suit the Times.

Plants 5 cents each. Seeds 3 cents a package.

Plain Catalogue free ONLY to those who mention AMERICAN GARDEN. Satisfaction guaranteed.

A. E. SPAULDING,
Ainsworth, Iowa.

GREGG RASPBERRY PLANTS.

300,000 first-class Gregg, Tyler and Souhegan Raspberry Plants, at low prices. Special rates for lots of 3,000 or more.

C. C. HART, SOUTHINGTON, Conn.

To Raise Cheap Corn, we Must Grow Large Crops!

THE WAUSHAKUM.

Eight rowed, yellow flint corn, has yielded more than Eighty bushels shelled corn per acre, on an entire field. The seed I offer was grown from corn produced at Waushakum Farm, So. Framingham, Mass. References: Dr. E. L. Sturtevant, Director N. Y. Agr. Exp. Station; E. H. Libby, Publisher THE AMERICAN GARDEN.

Prices: One Bushel, $1.50; One-half Bushel, 80 cents; One Peck, 50 cts.; Three Bushels, or more, $1.25 per bushel. One pound by mail, postpaid, 20c. No charge for packages.

E. S. GOFF, Agricultural Experiment Station, **Geneva, N. Y.**

HAND Fertilizer Dropper RANDOLPH HAND

Fertilizer Dropper in the hands of any ordinary man or boy is perfection itself. As he moves over the field with rapid steps, as if by magic it will drop any amount of Fertilizer required per acre, and scatter it evenly about the hill. Send for circulars, testimonials, and price. Agents wanted. Address,

P. F. RANDOLPH,
Liberty Corner, N. J.

A BEAUTIFUL LAWN

can be quickly obtained by sowing

HENDERSON'S "CENTRAL PARK" LAWN GRASS SEED,

a mixture of selected grasses identical with those used in forming the lawns of New York's famous park. Over 60,000 packages sold by us last season. One quart of seed will sow an area of 15x20 feet=300 square feet, or for an acre 5 bushels are required. Instructions for sowing and after treatment sent free with every order. Price, 25 cents per quart. (If by mail, add 10 cents per quart for postage.) If by freight or express, $1.50 per peck; $5.00 per bushel.

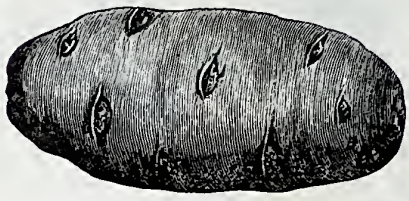
HENDERSON'S LAWN ENRICHER,
For Old and New Lawns.

For many years we have been using in our own grounds a fertilizer which we have found to be never failing in inducing a rapid and rich green growth to the lawn. To meet the wants of hundreds of patrons who desire a clean, portable and convenient lawn dressing, we now offer them the mixture designated as "HENDERSON'S LAWN ENRICHER." By express or freight, a 10 lb. package for 50 cts; 20 lb. package for $1.00; 50 lb. package for $2.00; 100 lb. package for $4.00.

As a guide in ordering, we would state that a 10-lb package is sufficient to go over an area of 300 square feet. New Catalogue of SEEDS and PLANTS mailed on receipt of 6 cents (in stamps.)

Peter Henderson & Co. SEEDSMEN & FLORISTS, 35 & 37 Cortlandt St., New York.

BURPEE'S EMPIRE STATE POTATO,



Now offered for the first time, is decidedly **the best** and **most productive** Main Crop Potato ever introduced. It is strikingly beautiful; skin white and smooth; eyes shallow, but strong; flesh pure snowy white and of peculiarly rich and delicate flavor. Of vigorous growth, the tubers cluster compactly in the hill. It is enormously productive, having yielded at the rate of **nearly 600 bushels per acre**, and thoroughly tested along-side of the most popular varieties. **Burpee's Empire State** has, in every case, outyielded all others. Prices: peck, $1.50; bushel, $5.00; barrel, $10.00. By mail, 75 cts. per lb.; 3 lbs. for $2.00, post-paid. For full particulars, illustrations and testimonials, see **BURPEE'S FARM ANNUAL FOR 1885**, which will be sent **free** to any address.

W. ATLEE BURPEE & CO., Philadelphia, Pa.

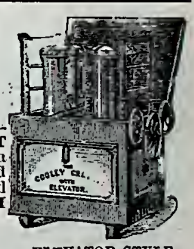
The Records Show

That the Butter-Yield of the

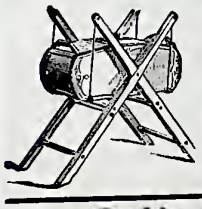
COOLEY CREAMERS

CABINET STYLE.

has never been equalled by any creamery, pan, or separator. They carried off the premiums for the **GREATEST PER CENT OF YIELD** in the great dairy States of Iowa and Wisconsin. Their combined products of butter and cheese reaching nearly sixteen pounds to the hundred pounds of milk. They take the lead in the **CREAM GATHERING SYSTEM.**



ELEVATOR STYLE.



THE DAVIS SWING CHURN.

AWARDED SIX SILVER MEDALS

in the last four years over all competitors. Because it operates the easiest. Because it churns more thoroughly, and consequently makes the most butter. Because it is the easiest to clean. Because the cover is always on top, avoiding all leakage and emptying the cream on the floor, as is frequently the case with revolving churns. Send for Illustrated Circulars.

Vermont Farm Machine Co., Bellows Falls, Vt.

NEW & RARE FRUITS PLANTS and SEEDS

and all the old reliable sorts. NONE BETTER. None Cheaper. Plants, Trees, Vines, Seeds, &c. *by mail*, a specialty. Postage paid; safe arrival guaranteed. **64 CHOICE CHEAP $1 SETS** For example: 15 splendid ever-blooming Roses, 15 sorts, our choice, $1; 14 magnificent Carnations, 14 sorts, $1; 14 Chrysanthemums, 14 sorts, $1; 36 packets choice Flower Seeds, $1, or 17 for 50c., or 8 for 25c.; 29 packets choice Vegetable Seeds, $1, or 14 for 50c., or 7 for 25c. 7 pkts. choice Vegetable and 8 pkts. choice Flower Seeds, 50c. Kieffer Standard Pear, 1 Russian Apricot, and 1 Champion Quince, $1. 12 Grape Vines, 4 sorts, $1, or 12 all Concord, $1. 75 strong Strawberry Plants, 5 sorts early to late, $1. 75 Hardy Catalpa, $1. 40 Sweet Chestnuts, $1. 30 Mulberries, 10 each Russian, Black English and White, $1. For the other 54 $1 sets, and 1,001 things beside, send for our valuable **Catalogue** of over 110 pages, **FREE.** Every thing kept in the Nursery line, from pot plants to forest trees, including an immense stock of Grape Vines and Fruit and Ornamental Trees of all sizes. **31st Year. 500 Acres. 21 Large Greenhouses.**

THE STORRS & HARRISON CO. PAINESVILLE, LAKE CO., Ohio

NEW FRUITS — Catalogue FREE! ESTABLISHED 1855

NIAGARA GRAPE

MARLBORO Rasp- CORNELIA Straw- **BERRY!**

KIEFFER'S HYBRID PEAR!

Also all the older Fruits, Ornamentals, &c.
H. S. ANDERSON, UNION SPRINGS, N. Y.

RED FLOWERING DOGWOOD, and other novelties.

Kissena Nurseries.

Trees and Plants.

Parsons & Sons Co., LIMITED.
Flushing, N. Y.

BLUEBERRY A full history of this valuable fruit, with a beautiful cut of the fruit FREE. Please send your address on a postal. DELOS STAPLES, West Sebewa, Ionia Co., Mich.

WANTED.—Ladies or Gentlemen to take nice, light, pleasant work at their own homes (distance no objection). Work sent by mail. $2 to $5 a day can be quietly made. No canvassing. Please address at once, Globe Mfg Co., Boston, Mass., box 5344.

EVERGREENS and **FOREST TREES** by the million or single tree. All sizes and large variety. Prices Lower than any place in America. CATALOGUES FREE.
GEO. PINNEY, Sturgeon Bay, Wisconsin.

NEW Raspberry Marlboro, Gooseberry, Industry, Grape Niagara, Circulars giving full description and prices together with a colored plate of the Gooseberry free.
ELLWANGER & BARRY,
Mt. Hope Nurseries. Rochester, N. Y.

PRUNUS PISSARDI. New purple-leaved **PLUM** SIMONI. New Iron-Clad Marianna *Plum*, Salome *Apple*, Marlboro *Raspberry*, Indiana *Strawberry*. All *new* and *handy* Fruits and Flowers. *Catalogues free.* E. Y. TEAS, Dunreith, Ind.

CIRCULAR of Trees, Plants, Seeds, Hydraulic Ram, Books, Bibles, etc., sent free.
J. G. KREIDER, Milton Grove, Pa.

ROOT GRAFTS, Apple Seedlings and Imported Stocks, Young Ornamentals, &c. *Reduced Price List* just issued. Stark & Co. Louisiana, Mo

1838---1885. **THE LARGEST** AND MOST BEAUTIFUL EARLY PEAR. Ripening in Central New York *early in July*, and *Sells at Highest Prices.* Send for *history of* original tree. 100 years old. ☞Headquarters for Kieffer Pears, Parry Strawberries, Wilson, Jr., Blackberries, Marlboro Raspberries, Grapes.
WM. PARRY, Parry P. O., N. J.

TREES.

We are still offering Great Bargains in Shade Trees of all sizes. Large Norway Spruce—Retinospora obtusa, 4 feet; American Arborvitæ and a General Assortment to close out the Business.
P. H. FOSTER,
(Nursery) Babylon, L. I., N. Y.

EXTRAORDINARY OFFER. Send for Catalogue. $5.60 in choice vegetable and flower seeds as a premium, together with new and rare plants. A catalogue will only cost a postal card and will astonish you.
F. E. FASSETT & BRO., Florists,
ASHTABULA. - - - - - OHIO.

ELECTROS and Engravings for Florists, Seedsmen, Nursery-men. 10,000 in stock.
Send for Catalogues.
A. BLANC,
314 N. 11th St. Philada.

DON'T FAIL TO TRY
HORSFORD'S PEA!
MARKET Garden
Extremely Prolific, 150 pods on one plant. 20 bushels from 35 pounds, 25c. per 2 oz. pkt: 5 pkts. $1, postpaid. Stock small. Order early. For sale by first-class seedsmen. Grown by PRINGLE & HORSFORD, Charlotte, Vt.

SMALL FRUIT PLANTS.
GRAPEVINES, &c., in variety. All the leading varieties of SMALL FRUITS, both NEW and OLD at reasonable rates. CATALOGUES FREE. Address,
IRVING ALLEN, SPRINGFIELD, MASS.

For Sale. Fruit and Truck Farms in the famous Fruit Region of Southern Illinois. For particulars address BAILEY & HANFORD, Makanda, Jackson Co., Ill., on Ill. C. RR.

15 Pkts. of new and fresh vegetable seeds for 25 cts., also our catalogue.
VIC. KEEN & CO., Box 1251, Philadelphia, Pa.

14 for $1.00
6 " .50
3 " .25
ROSES 1st Quality only. 100,000 plants at equally low prices
Thomas G. Harold, Kingston, Somerset Co., Maryland.

CHRYSANTHEMUMS.
If you wish to get the newest and best varieties at the Lowest Prices, write for my catalogue, with directions for culture.
WALTER W. COLES, Claymont, Del.

NIAGARA GRAPES.
Straw-
Black-
Rasp-
BERRIES.
west and best varieties. Catalogue free.
JOSEPH D. FITTS, Providence, R. I.

15 PER CENT.!
DIVIDENDS GUARANTEED.
Will place money for *INVESTORS* in our *CATTLE COMPANY*, and guarantee 15 per cent. per year net earnings. Address WASHINGTON COUNTY BANK, WEISER, IDAHO.

Mention THE AMERICAN GARDEN.

CANNA EHEMANNI.

THE NEW CANNAS.

Ehemanni. This is a beauty in every sense. The massive deep green Musa-like leaves alone would make it a valuable acquisition, but when we see its magnificent crimson flowers, over three inches long and two inches wide, suspended from its deep red whip-like flower stalks, it is difficult to find words to express our admiration—so different in general character that it is hard to believe that it is a Canna. The growth of the plant is remarkably strong and robust, growing from five to seven feet high, each stalk terminating with a long flower spike. We have often had six spikes in bloom at one time, bearing from twenty to thirty flowers.

Gladioliflora. Is quite distinct from *Ehemanni*, the color being a rich amber or orange. The flowers are very large, growing erect instead of drooping. The foliage is of a beautiful blue-green, rather narrow; plant grows very compact and is remarkably free-flowering, forming nearly solid masses. It does not exceed six feet in height, and is very expressive. A plant of each of these Cannas planted in good rich soil, either separately on the lawn or in mixed borders, or for centers of large beds, form most beautiful objects.

Prices for the above new Cannas, 50 cts. each; $4.50 per dozen, by express.

CLUB RATES FOR CANNA EHEMANNI AND GLADIOLIFLORA.

By express only: Three of each, six pieces, $2.25; six of each, twelve pieces, $3.50.

We are told that our catalogue (which we send on application) is one of the best and *most useful* published this year. It contains many things that we introduce, and offer exclusively. Among them, for instance, we offer 3 **Clematis** for **$1.00.** They are *Jackmani; Crispa*, delicious fragrance; *Coccinea*, brilliant scarlet.

Swanley White Violet, the first and only really good White Violet ever introduced. 25 cts. each; five for $1.00.

V. H. HALLOCK, SON & THORPE, Queens, N. Y.

DAKOTA RED
POTATO!

The publisher of THE AMERICAN GARDEN, then specialist to Hiram Sibley & Co., in a test at Rochester, N. Y., in 1883, found this to be the **MOST PROLIFIC OF ANY OF 125 VARIETIES**, and equal in quality to any of them.

Last season it again yielded enormously. From one pound of seed, H. C. Pearson, N. Y., grew 2,558 lbs.; A. Rose, N. Y., 2,349 lbs.; C. F. Thompson, N. H., 2,118 lbs.; Chas. C. Miller, O., 1,677 5-7 lbs.; G. W. P. Jerrard, Me., 1,638 1-4 lbs.; E. H. Vick, N. Y., 1,320 1-2 lbs.

These yields are certified to by Wm. Hamilton, Caledonia, N. Y., President of Western New York Agricultural Society; James S. Grinnell, Greenfield, Mass., formerly Acting Commissioner of Agriculture, at Washington, D. C.; John E. Russell, Boston, Mass., Secretary of State Board of Agriculture of Massachusetts; I. P. Roberts, Professor of Agriculture at Cornell University, Ithaca, N. Y., committee.

These enormous yields of potatoes, grown from one pound of seed by careful cultivation and with the liberal use of a high grade fertilizer, are worthy the consideration of all interested in the culture of the potato, or in the possibilities of reproduction in the Vegetable Kingdom. 2,558 pounds from one pound of seed greatly surpasses, we believe, anything heretofore recorded in the culture of the potato. That more than a ton and a quarter, or 42 1-2 bushels, should be grown from one pound of seed is truly marvelous. (*Report of Committee.*)

My seed is direct from the originator, and my stock is warranted genuine. (*Only selected tubers are sent out.*)

I refer by permission to the publisher of THE AMERICAN GARDEN.

PRICES—Pound, by mail, 75 cts.; peck, by express or freight, $1.50; bushel, $5.00.

WM. YOUNG, Jr., Hopkinton, Mass.

SAMPLE ROSE 25c. with Catalogue, or 4 Roses 50c. Order now. W. B. REED, Chambersburg, Pa

WILD FLOWERS For Cultivation. Orchids, Lilies, Ferns, Alpine, &c. SEND FOR CATALOGUE.
EDWARD GILLETTE, Southwick, Mass.

NEW FRUIT AND ORNAMENTAL TREES

ROSES GRAPE VINES ETC.

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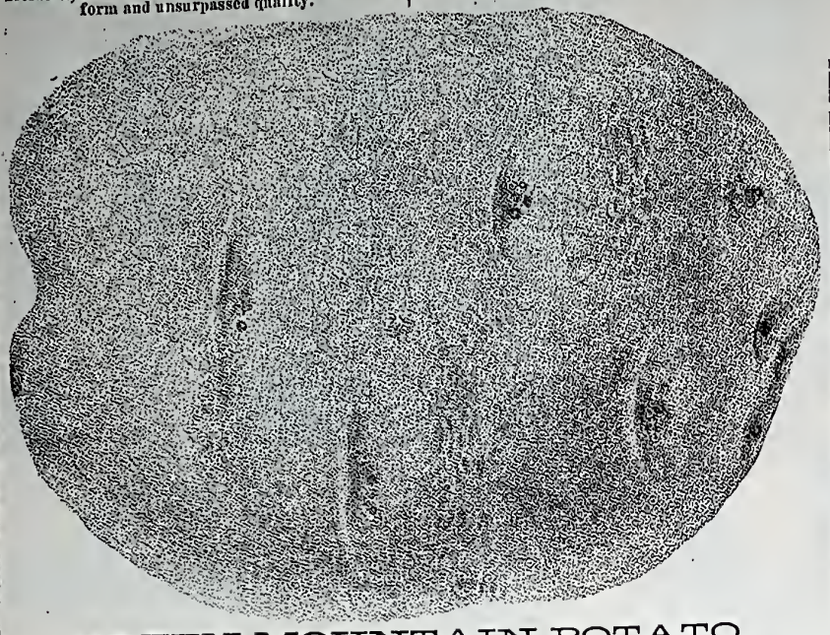

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GREEN MOUNTAIN POTATO.

This wonderful new potato was raised from seed borne on the Drumore, impregnated with pollen from the Excelsior, and was originated in Vermont. That it is an extraordinary and an exceedingly valuable variety there is not a doubt. In fact, judging from our knowledge of new potatoes, we say it stands without an equal as regards all the essentials of a valuable and profitable variety to grow as a general crop for home or market. Its handsome form, white skin, and large size, recommend it everywhere. The flesh is white and fine-grained, cooks dry and mealy, and is of superior flavor. This is the case when first dug, and they retain their good cooking qualities and keep sound and perfect until the new crop comes again. As a variety to keep for late spring use it has no superior. Vines grow vigorously, foliage deep green, the tubers grow compactly in the hill, which is completely crowded with fine large potatoes; they ripen in August if planted in April and in the important matter of productiveness they are perfectly marvelous, far surpassing all other varieties. This quality, combined as it is with fine appearance and good table qualities, makes the Green Mountain *the* most valuable variety in the country, and it is only the matter of time to make its merits known when it will be sought after by all growers, and will, as fast as sufficient stock can be grown, supplant all other varieties. Read the report from the *Rural New Yorker* Experiment Grounds.

Green Mountain Potato was planted April 7th and the crop was harvested August 27th, the variety therefore being a late intermediate. They were dug under the supervision of E. Williams, Secretary of the New Jersey Horticultural Society, and Chas. L. Jones, of Newark, N. J., who, with the editor of the *Rural New Yorker*, weighed and estimated the yield, which was at the rate of **1,391.50 bushels per acre.** * * * * There was an average of 11 2-5 to the hill, and an average weight of 5 3-4 pounds to the hill. They were planted two eyes to the hill, one foot apart, in rows three feet apart. * * * * This is the largest yield of potatoes ever raised on these Experiment Grounds. E. S. CARMAN, Editor.

Also from a letter received from the editor of the *Rural New Yorker* under date of December 6th, we quote: "Of all the potatoes we have ever tested, this Green Mountain yields the most. It is an *immense yielder*."

There probably is no person in the country who is better able to judge of new potatoes than Mr. Carman, and such words as above coming from him, must carry great weight. From our own knowledge of them, we judge them to be *the best potato in America*, and to secure them we paid the enormous price of **$200 per barrel** for the stock, which we control entirely. They cannot be offered by any other party this year, and can only be secured of us on the following

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Each purchaser of the **Green Mountain Potato** must agree not to sell said potatoes for *seed purposes* for a term of three years for a less price than that fixed and sold at by ourselves. The price for each year will be found in our Annual Catalogue of that year. By this arrangement you can ask and receive from parties who will want them, a price which will give you a handsome profit. Besides, all purchasers of this season we will make our special agents in following years to introduce these potatoes and supply them with what they may need at reduced rates. There is no reason why a dollar invested now will not realize you several hundred dollars in the course of a few years; any person can see the force of this argument. The stock of **Green Mountain Potatoes** is as yet very limited; we have set aside for our own planting less than two barrels, all the balance we shall distribute in lots of **one dollar's worth,** the quantity not to exceed one pound. If the applicants are more numerous than the number of pounds, each party will receive a fraction under this quantity; the distribution will be made April 15th and each party will immediately receive his share by mail. If we receive any orders after April 15th, we will fill them from what we reserve for our own seed. Send on your orders at once and secure a share in the distribution which will prove the best investment you ever made. Price $1.00 per share. Elegant seed catalogue FREE.

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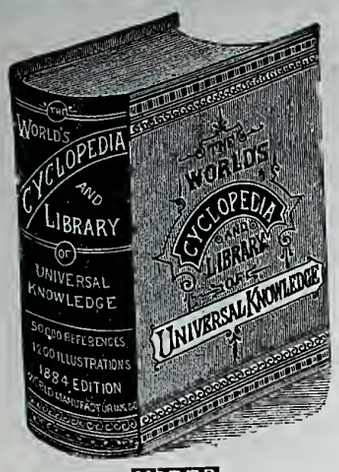

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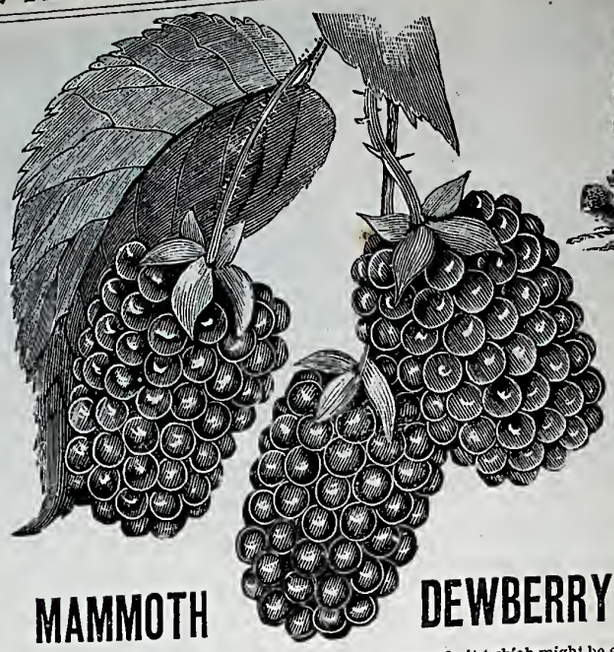

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SPOTTED CALLA—A grand variety, the leaves of which are beautifully spotted with white. The flowers are elegant, being pure white with a black center. Strong bulbs which will flower very soon, **50c.** each, **3** for **$1**. We can also supply the **RESURRECTION PLANT,** a great curiosity, at **30c.** each.

New **DOUBLE WHITE FUCHSIA**, Madam Van Der Straas, 35c. each, 2 for 60c., 4 for $1.

Our **SUMMER FLOWERING OXALIS** make most beautiful borders around flower beds, giving a great quantity of pretty flowers and foliage all the season; also splendid for pots. They are very pretty and cheap; 25 bulbs for 15c. or 100 bulbs for only 40c. We also send 12 large flowering bulbs of double **PEARL TUBEROSES**, 90c.; 5 fine hardy **LILIES**, including Auratum, 75c.; 12 choice mixed **GLADIOLUS**, 50c.; 4 beautiful **TEA-ROSES**, white, red, yellow and pink, 50c.; 4 Carnation Pinks, 4 Geraniums, 4 Chrysanthemums, or 4 Fuchsias for 50c. See our large, beautiful catalogue, free to all, for other special offers. Any of the above articles will be **sent by mail postpaid,** and guaranteed to arrive in good condition. They are exactly as represented, and will more than please those who plant them. Many years of liberal and honest dealings have secured to us our great business, extending to all parts of the world. Order at once.

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Address, J. LEWIS CHILDS, Floral, Queens Co., N. Y.

N. B.—**Floral** is the name of a new post-office recently established in our seed store, near Queens. Remittances can be made in Stamps, Greenbacks, Drafts, P. O. Money Orders or Postal Notes, but all P. O. Money Orders or Notes must be made payable at New York City Post Office. **SPECIAL OFFER**—For every dollar's worth ordered, we will give Free a paper of the above Mignonette, Verbena, or White Pansy.

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THE NIAGARA WHITE GRAPE COMPANY, having decided to offer for sale to the general public, without restriction, a limited number of two-year-old vines of their **CELEBRATED WHITE GRAPE NIAGARA,** orders will now be received and entered in rotation for vines to be delivered in the spring of 1885, until their stock of vines is exhausted. The merited popularity of this wonderful Grape among fruit lovers throughout the country, has induced unscrupulous persons to attempt a **FRAUD** in offering to furnish them to their customers at a reduced price, claiming that they are genuine Niagaras. This Company desires, therefore, to inform the public, that it now has, and always has had, the absolute control and possession of all the vines grown from the wood or cuttings of the Niagara up to this time. AND THAT NO OTHER PERSON HAS EVER HAD THE RIGHT TO PROPAGATE IT. Only persons having a certificate of authority from the Company, under the Company's SEAL, will have the right to take orders for or the ability to supply the vines of the NIAGARA, and that every vine furnished by the Company, direct or through their authorized agents, will have securely attached to it A SEAL, plainly stamped with OUR REGISTERED TRADE MARK. Reliable dealers and nurserymen will be supplied upon liberal terms, and furnished with authority to take orders, making satisfactory arrangements with the Company. Local agents wanted in every town throughout the United States and Canada, to sell our Niagara Vines from sample grapes. Circulars and Colored Plates are also furnished by the Company. Address

NIAGARA WHITE GRAPE COMPANY, LOCKPORT, New York.

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A beautiful work of 150 pages, Colored Plate, and 1000 Illustrations, with descriptions of the best Flowers and Vegetables, prices of Seeds and Plants, and how to grow them. Printed in English and German. Price only 10 cents, which may be deducted from first order. It tells what you want for the Garden, and how to get it instead of running to the grocery at the last moment to buy whatever seeds are left over, meeting with disappointment after weeks of waiting.

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With all the other varieties growing here, and with a knowledge of those catalogued throughout the world, we claim that the Marlboro has not an equal in desirable quality. We have invited all interested to come and see it, and neighbors and strangers without a single exception bear us out in the above statement. Interested parties and partisan journals may continue their misrepresentations. We say, come and see its earliness, its hardiness, its great growth of bush and unequalled size and perfection of all the berries. We also want you to eat it and try its solidity. Part of the crop was sent to Montreal, 450 miles by rail, in good order. First shipment brought 60 cents per quart, wholesale in New York, and ruled higher throughout the season than any other variety. Our new seedling grape, the

ULSTER PROLIFIC,

In hardiness, mildew and rosebug proof, and unequalled quality with its great bearing habits, much pleases the most difficult. The refinement of our seedling the

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Its earliness, growth and productiveness is already known to the country. The high quality of our white grape

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Is so generally acknowledged that it no longer needs a description. Vineyardists are now planting it by the thousand. Send for circulars. Our recent hardy seedling blackberry, the Minnewaski, is not yet catalogued or priced, but will be ready next fall.

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For the Flower Garden, Greenhouse, Fruit and Vegetable Garden, New and Rare Plants and Flowers, Forestry, Botany, Hints for Mouth and Season for Amateurs, Florists, Fruit Growers, etc. Best writers. Experienced editor of 27 years. Send for a sample with 18 cents in stamps. Subscription, $2.00 per year. Try it for a year. Address CHAS. H. MAROT, 814 Chestnut St., Phila.

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The **WAUSHAKUM** (eight-rowed, yellow flint) corn has yielded more than eighty bushels per acre on an entire field. The seed I offer is from corn grown at Waushakum Farm, So. Framingham, Mass.

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Prices, 1 bushel, $1.50; one-half bush., 80c.; 1 peck, 50c.; three bushels or more, $1.25 per bushel. One pound by mail, postpaid, 20c. No charge for packages.

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TEN strong pot-grown plants for $1. ONE HUNDRED $8. PREPAID. Catalogue free. J. L. DILLON, Florist, Bloomsburg, Pa.

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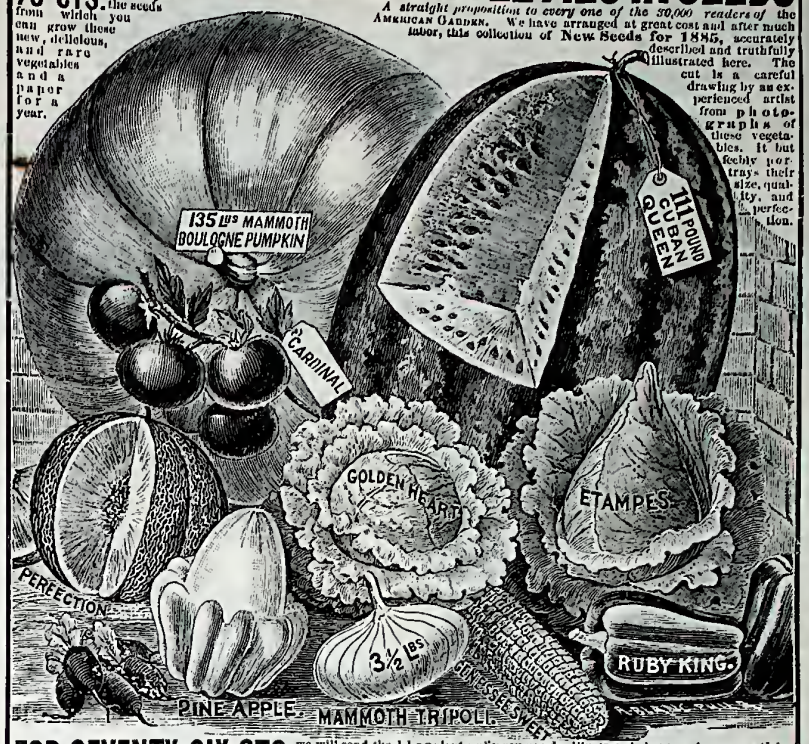
GREATEST OFFER OF NOVELTIES IN SEEDS

76 CTS. will get you the seeds from which you can grow these new, delicious, and rare vegetables and a paper for a year.

A straight proposition to every one of the 50,000 readers of the AMERICAN GARDEN. We have arranged at great cost and after much labor, this collection of **New Seeds for 1885**, accurately described and truthfully illustrated here. The cut is a careful drawing by an experienced artist from photographs of these vegetables. It but feebly portrays their size, quality, and perfection.



FOR SEVENTY-SIX CTS. we will send the 11 packets of new seeds, illustrated above, and our monthly paper, "The Farm and Garden," the best garden, floral, and farm paper in America, for 1 year, free by mail. *Every subscriber* to our paper in time will get us more, and though twice the value is here given in seeds alone, we eventually make a profit. The fact that our advertisement appears in the AMER. GARDEN is positive proof that we will do exactly what we promise, and that our seeds are as represented

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They are all woven by hand, and are finished by a new and improved process, which, while giving Softness and Richness in appearance, renders them much less liable to get glossy in Wear.

Our present prices range from $1.25 to $5 per yard.

Satin Duchess, Radzimers, Faille Francaise, Mascott, and other New Weaves at very Low Prices.

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BUTTER COLOR Used by best Creameries and Dairies BECAUSE it is the Strongest, the Purest, the Brightest and the Best.

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Color the Buttermilk or Turn Rancid.

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It is not our old Color, but a new one so prepared in refined oil, that it cannot change.

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YELLOW BUTTER

☞ BEWARE of imitations, and of all other oil colors, for they get rancid and spoil the butter. See that our trade mark, a dandelion blossom, is on the box, and the signature of Wells, Richardson & Co., is on the bottle and TAKE NO OTHER. If the dealer does not keep it, write us to know where and how to get it without extra expense.

Sold by druggists, grocers and merchants. Four sizes, 15c. 25c. 50c. $1.00.

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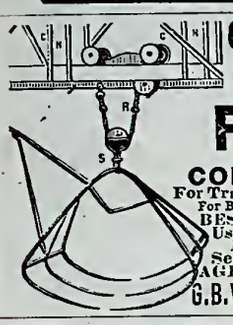

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Seed stock from the originator. THE MOST PROLIFIC OF 126 VARIETIES in a comparative test. Yielded this year over 2,300 lbs. from 1 lb.

Quality equal to the old Peachblow. Bushel $5, peck $1.50.

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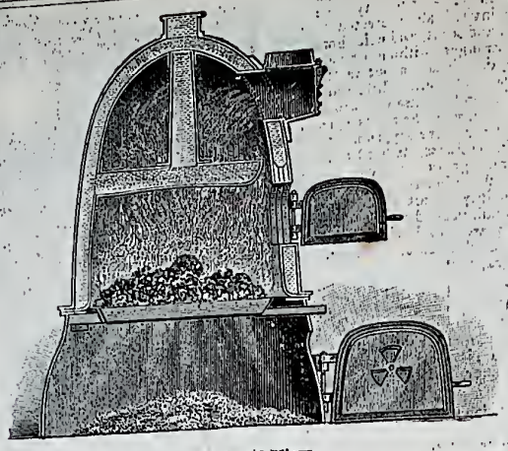

Sectional View.

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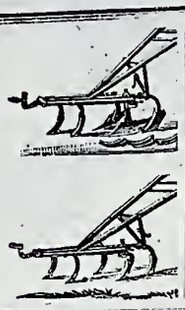

THE NEW **"PLANET JR"** HOLLOW STEEL STANDARD —HORSE HOE,—

As lately introduced, has no equal in the world. Its excellent work in the field has distanced that of all competitors. It is in some sections, doing in one passage, the work of four or five old-style implements, and in others superceding the cumbersome and expensive two-horse tools. The "PLANET JR" HAND SEED-DRILLS AND WHEEL HOES are the newest and best, lightest and strongest known. There are 7 distinct tools, each with special merits, no two alike or the same price; all practical and labor-saving. Let no Farmer or Gardener fail to study up during the winter evenings our 1885 CATALOGUE, which gives reduced prices, careful and exact engravings of these different machines, and such descriptions as will enable the reader to judge correctly of their merits. Thirty pages and Forty engravings. Free to all. Correspondence solicited.

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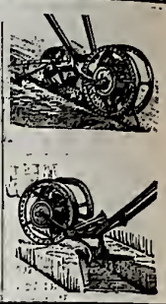

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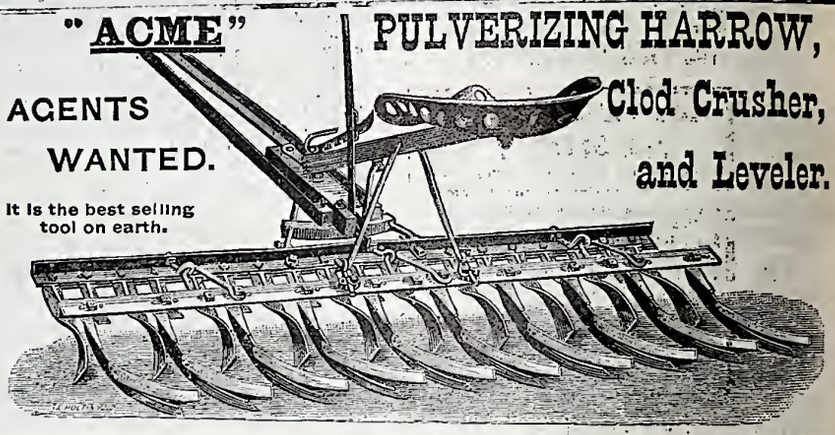

The **"ACME"** subjects the soil to the action of a **Steel Crusher** and **Leveler**, and to the **Cutting, Lifting, Turning** process of DOUBLE GANGS of **CAST STEEL COULTERS**, the peculiar shape and arrangement of which give **immense cutting power.** Thus the three operations of **crushing** lumps, **leveling** off the ground and thoroughly **pulverizing** the soil are **performed at the same time.** The entire absence of **Spikes or Spring Teeth** avoids pulling up rubbish. It is **especially adapted** to inverted sod and hard clay, where other Harrows utterly fail; works perfectly on light soil, and is the only Harrow that **cuts over the entire surface** of the ground.

Variety of Sizes, 4 to 15 feet wide.——We deliver free at our distributing depots.

DO NOT BE DECEIVED. Don't let dealers palm off a base imitation or some inferior tool under the assurance that it is better, but SATISFY YOURSELF BY ORDERING AN "ACME" ON TRIAL. We will send a Double Gang Acme to any responsible farmer in the United States, and if it does not suit, he may send it back, we paying return freight. We don't ask pay until tried on his own farm.

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Cutters for Roots, Stalks, Hay. Cyclone Cutter, best of all for hay, straw or ensilage; makes fine feed of dry corn-stalks.

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IS NOW READY FOR DELIVERY.

WE have endeavored to compile as perfect a book as possible, and have been over sixteen months engaged therein. The addresses have all been tested, and the book is as accurate and complete as it is possible for human skill and patience to make it. We believe that it will be an invaluable guide for the trade.

PRICE, $6.00 PER INTERLEAVED COPY.

Please remit amount in Registered Letter, P. O. Order, or Postal Notes, and book will be sent by mail, postage paid; or, by Express, C. O. D., at purchaser's expense.

CHARLES F. EVANS, Editor, Rowlandville Nursery, Station F, PHILADELPHIA, PA.

SUPPLEMENT A. IT is the intention to have ready for delivery at the same time as "The Horticultural Directory of the United States," "SUPPLEMENT A," which will be a list giving the names and post-office addresses of the Nurserymen, Florists, Fruitgrowers, and Seedsmen of England, Ireland, Scotland, Wales, and the Channel Islands, comprising in all about two thousand addresses. The Supplement will be issued in pamphlet form, and will be sold to subscribers to the "HORTICULTURAL DIRECTORY" at one dollar ($1.00) per copy; to non-subscribers at one dollar and fifty cents ($1.50) per copy, postage paid. The trade must bear in mind that the rate of postage to points covered by the Supplement is only one cent for unsealed circulars weighing not more than two ounces. The business in Horticulture between the two English-speaking countries is yet in its infancy, but is growing rapidly.

SUPPLEMENT B WILL be issued April 15, 1885, and will comprise the names and addresses of the principal Nurserymen, Seedsmen, and Florists of Austria, Bavaria, Belgium, Denmark, France, Germany, Holland, Hungary, Italy, Poland, Russia, Saxony, Sweden and Norway, Switzerland, Wurtemburg, Brazil, India, Japan, Australia, New Zealand, and South Africa. Price, same as "Supplement A." Subscriptions and remittances must be made to

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Home Cooking, With original and tried recipes, contributed by subscribers. This is a Special Feature which is considered the best and most practical department ever published in any household paper. **Prizes Given,** for best recipes and contributions.

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Floral Department, illustrated and carefully edited by EUEN E. REXFORD. Letters from subscribers and answers to correspondents on all household topics. It is the best household paper ever published; and so popular that, in less than two years, it has gained a circulation of **70,000** copies each issue. Address:

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FOR PRACTICAL FARMERS.

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Also, the favorite Fancy Breeds.

Mammoth WHITE TURKEY Eggs, $3 per 9; WHITE PEKIN DUCK Eggs, $2 per 11; EMBDEN GOOSE Eggs, 50 cents each.

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FARM OR COUNTRY SEAT

In the mild and delightful climate of

Maryland or the South

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CONNECTICUT AGRICULTURAL EXPERIMENT STATION.

Extracts from Annual Report by the Director, Prof. S. W. JOHNSON, on Fertilizers during the past year.

On Valuation of Super-Phosphates and Special Crop Manures.

IN 1884, SPECIAL CROP MANURES WERE THE CHEAPEST.

Special Crop Manures cost on an average	13 per cent. over "valuation."
Super-phosphates " " "	23 " " "
Mapes' Special Crop Manures cost on an average less than	5 " " "

Extract, page 50.

The Special Manures themselves are, however, good fertilizers, and, on the average, during this year, have furnished plant-food in a somewhat more concentrated form than other Super-phosphates, and at a considerably cheaper rate, although their average ton-cost has been higher. This will appear from the following comparison:

	Average cost.	Average valuation.	Difference.	Percentage difference reckoned on valuation.
Super-phosphates	$40.73	$33.13	$7.60	22.90
Special Manures	49.95	44.20	5.75	13.00

Some Reasons why High Grade Manures are Cheaper to the Farmer than Low Grade Goods.

Extract, page 51.

A further explanation of the more favorable relation of valuation to cost in the case of the Special Manures is, that, pound for pound, they contain more valuable material. The cost of mixing and selling a high grade article can hardly be greater than that of a lower grade. But in the first case, this cost of the preparation of the goods goes further with the farmer than in the latter case. To illustrate:—Suppose we have two lots of fertilizers unmixed. One contains 250 pounds of Muriate of Potash, 250 pounds of Nitrate of Potash, and 600 pounds of plain Super-phosphate, with as much more moisture, sand, peat or plaster, so that the total weight is 2,200 pounds. Its cost is $19. This we propose to mix and apply to an acre of land. The other lot contains 500 pounds of Muriate, 500 pounds of Nitrate, and 1,200 pounds of Super-phosphate, without any "ballast." It also weighs 2,200 pounds and costs $38. To sift, pulverize and mix thoroughly the raw materials in each lot, we will assume cost $6. Since the weight of the two lots is the same, the labor of handling and mixing will not be very unlike.

When the fertilizers are spread on the land, the first lot covers one acre and costs $19 plus $6—$25. The second lot covers two acres and costs $38 plus $6—$44, or $22 per single acre. Here, then, is a saving of $3 per acre, and a saving, it is to be noticed, made by buying the highest-priced fertilizer instead of the low-priced one.

The $25 Goods are the more Expensive, the $44 Goods are the Cheaper, if both are rationally used. We are not now arguing for Specials as against other Super-phosphates, but for high grade goods, whether Specials or not, as *against the more expensive low grade goods.*

The Mapes' Special Crop Manures found to be

THE HIGHEST GRADE and CHEAPEST MADE,

Excelling all other brands in strength and in supplying the best forms of plant-food at the least cost.

Comparison of the Leading Brands of Special Crop Manures for year 1884 which have complied with the Connecticut Law.

	Average cost.	Average station value.	Deficiency per ton.
STOCKBRIDGE MANURES.			
Potato (1), Grass (1), Forage (1)	$46.66	$35.93	$10.73
LISTER BROTHERS MANURES.			
Potato (1)	50.00	40.93	9.07
CHITTENDEN'S MANURES.			
Grain (1), Roots (1)	45.00	37.03	7.97
BAKER'S (H. J. & BRO.) MANURES.			
Tobacco (1), Oat (1), Grass (1), Corn (1), Potatoes (1)	47.40	40.31	7.09
MAPES' MANURES.			
Tobacco (2), Potato (1), Corn (1)	50.50	48.14	2.36

The "Comparison of Special Crop Manures of the same brand" (see pages 52 and 53 of the Official Report) from 1877 to date, show:—

While MAPES' SPECIAL CROP MANURES WERE FULLY UP TO PUBLISHED STANDARD IN 1878, and were THEN THE HIGHEST grade Manures made, that they have steadily, WITHOUT AN EXCEPTION, improved in strength each year.

A careful study of this Official Report will show that the claims made for the Mapes' Manures can be justly made by no other manufacturers.

For full analysis and composition of the Mapes' Manures see page 2 of the Mapes' pamphlet.

THE MAPES' FORMULA AND PERUVIAN GUANO CO., 158 Front St., New York.

A SUGGESTION TO GARDENERS.

MARKET gardeners on Long Island now rely almost wholly upon fertilizers. It is said that over 5,000 tons are used in this small territory annually. Why? First,—because they are cheaper than manure, although the Long Island farmers are so near New York City that stable manure can be brought to them in boat-loads at a very low price. Secondly,—Fertilizers are more cheaply applied, and produce as large crops of fully as good quality. It seems to us that market gardeners would do well to buy manure only for its mechanical action on the soil and for bottom heat. There are many market gardeners in the vicinity of Boston that are, as the Germans say, "manure sick." That is to say, they are in that condition in which there is not a sufficient supply of mineral elements to produce a paying crop. To such lands mineral fertilizers or chemicals should be applied, for they correct this condition. Let all market gardeners, therefore, who have not done so, try fertilizers on such lands. In other words, buy fertilizers which are concentrated plant food, for the same reason that grain, which is concentrated animal food, is bought for farm stock. Let the manure hold the same relation in the feeding of the soil, that the hay does in the feeding of stock. Hay is *bulky* animal food, while grain is *concentrated* animal food. Manure is *bulky* plant food, while chemical fertilizers are *concentrated* plant food. In each case they are best used together.

Reports on Strawberries, Fruits, Etc., with Stockbridge Manure.

Kennebec Co., Me., CHAS. G. ATKINS.—I planted several hundred young apple-trees on worn-out land, in May, 1881, making no preparation but the spading up of the places in the turf, and no manuring except three cents' worth of Stockbridge Fruit Tree Fertilizer per tree. All lived, and made excellent growth,—from 10 to 30 inches on each twig. I shall use more.

Hillsboro' Co., N. H., G. & H. WHITTAKER.—We have used the Stockbridge Manures on Grass, Peach-trees, and Grape-vines, with good success the past season.

Barnstable Co., Mass., J. S. DILLINGHAM.—I have used your Corn Fertilizer, also Potato and Bean, and am well satisfied with the result. I have also used your Cranberry Dressing for about 3 seasons, and have supplied my neighbors with it. We think it is valuable to make the vines grow and thicken. It helps the fruit and kills the moss.

Bristol Co., Mass., W. O. SWEET.—Having noticed in your pamphlet that Strawberries grown on Stockbridge would stand up better and produce finer berries than when grown on stable manure, I determined to experiment with it, and am well satisfied with the results. In 1879, I raised a good crop of Potatoes of superior quality, using nothing but your Stockbridge Potato Fertilizer. In the spring of 1880, I planted this piece of land—1-4 acre—to Strawberries. After well pulverizing the soil with a La Dow harrow, the plants were set out in April, and the first bag of Strawberry applied in July following, then another bag in September, and the rest in April, 1881, making 600 lbs. in all. The variety of Strawberry is the Charles Downing. When the fruiting season came, the fruit stems were strong and well loaded with large, firm berries; and the berries were the same from first to last picking, presenting a fine appearance in market, and bringing a better price than the same variety grown on other fertilizer.

Middlesex Co., Mass., H. H. BOARDMAN.—I have used your Stockbridge Fertilizer on Strawberries the past season, with satisfactory results. It is better for that purpose than any manure I know of. Your formula for garden crops pleases me equally well.

Windham Co., Vt., N. MONROE.—Applied 4 bags of your Stockbridge Fertilizer on my Strawberry patch, and the vines look better than when I applied a larger amount of stable manure.

SEND FOR PAMPHLET, MAILED FREE.

BOWKER FERTILIZER CO., } 27 Beaver St., New York. 43 Chatham St., Boston.

Millions' Strawberry and Raspberry Plants. Sucker State, Piper's Seedling, Old Iron Clad, Talapa, Russian Mulberry, Red Cedars, &c., &c. Write for Price Lists. Address BAILEY & HANFORD, Makanda, Jackson Co., Ill. On Ill. C. R. R.

HOW TO GROW STRAWBERRIES.

Sent free. Best of Plants at fair Prices. H. D. PUTNEY, Brentwood, N. Y.

The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

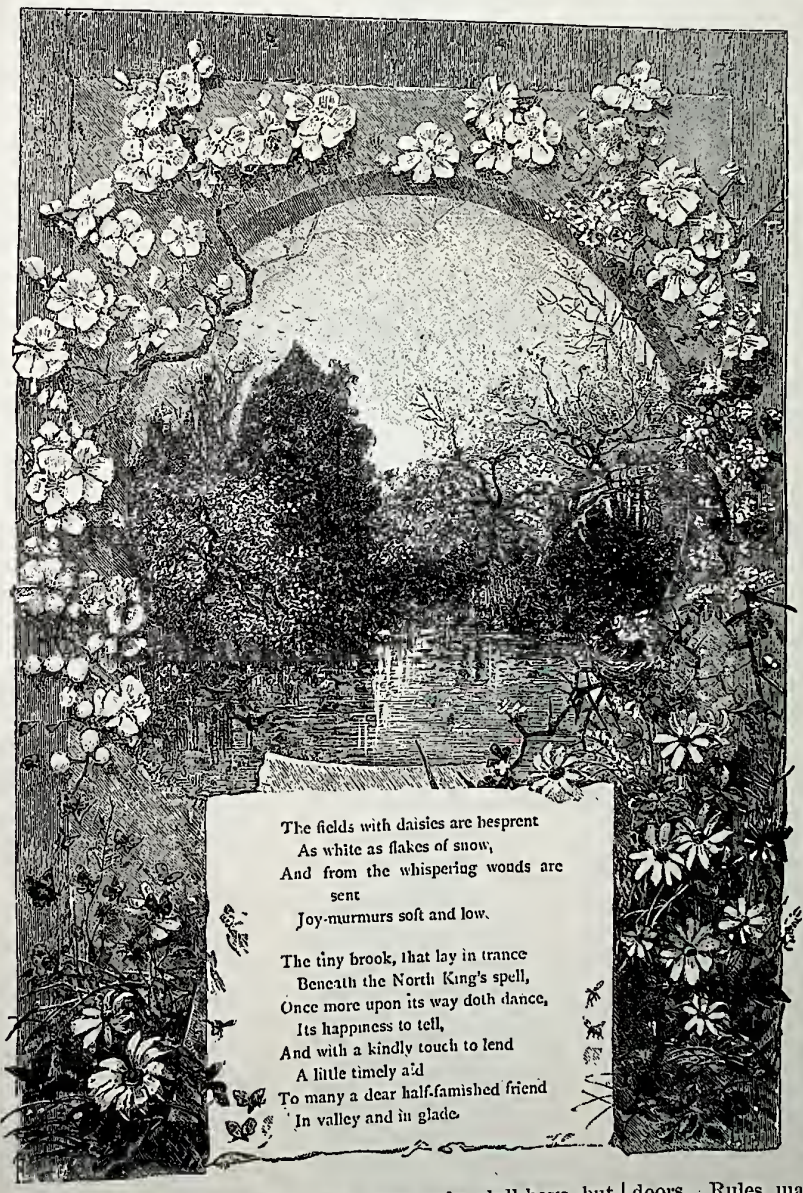
Vol. VI. Old Series, Vol. XIII. MAY, 1885. No. 5.

MAY DAY.

At no other time of the year are the changes from one season to another so sharply marked as at this, and, so far as its practical bearings are concerned, May Day indicates to many far more the beginning of an annual cycle than the first of January, occurring, as it does, when vegetation is at rest, and meteorological conditions remain unchanged for weeks. But with the dawn of May, Nature shakes off the last remains of her wintry garments, soon to appear adorned in leafy green and fragrant flowers. The return to new life and activity that surrounds us at every turn, the balmy air we breathe, laden with strange, magical powers, seem to take possession of our whole being, and to transfuse bright hopes, fresh aims and new life through the body and mind.

In our prosaic nineteenth century so many time-honored and beautiful customs of former ages have been discontinued and become forgotten, that to the majority of persons the first of May probably suggests no more than moving and the payment of rent.

Among the ancient Romans the month of May was held as the foremost month of the year, and was dedicated to Jupiter, *Deus Majus*, hence its name. Between April 28th and May 3d elaborate floral festivals were held to his honor and to commemorate the return of flowers. Tennyson's charming poem, the "Queen of May," familiar no doubt to most of our younger readers, recalls the great anxieties of the little maid that she should awake in time to be the "Queen of May."



But it is not children alone that did get up before daylight to be in time for the May festivals, and that do up to the present time, in most European countries, celebrate May Day with all the zest and jollity of former times, though fortunately deprived of its coarser and objectionable features. May parties, excursions and picnics to the budding woods and sunny fields are the order of the day, in which old and young participate. Nothing, surely, could be more appropriate, more joyful, than thus to greet a bountiful, virgin nature, by welcoming the return of glorious spring.

There is hardly anything that we as a nation are so much in need of as holidays which take us away from the everyday routine of business, and which draw our minds to other channels of thought. "All work and no play" does not only make dull boys, but dull men and dull women. A properly arranged May festival for old and young would be a bright occasion to look forward to, and, when once established, would be enjoyed by all. Some of the States have instituted "Arbor Day," which is an excellent idea that partly serves the purpose above mentioned. Whatever we may call the day, we need a national out-door family festival at this season of the year, when sunshine, green hills and balmy breezes invite us to leave, if only for a day, the narrow town and village.

TASTE IN HOME SURROUNDING.

Walk, if you will, said James Vick, through the avenues or resident streets of any of our large towns or cities, and carefully note the manner in which grounds are arranged. Here we see a handsome house with a large lawn, the trees are planted in regular rows, the evergreens are shorn of all their beauty, they are deformed and made to assume shapes stiff and ugly. The walks are all straight, the flower-beds planted with the utmost accuracy may contain real treasures, but the blossoms hardly dare bend where wind blows, and even the Pansies never dream of looking jolly and full of fun. We have not seen a face yet we know. How cold and formal is every member of that family.

Many sumptuous residences impress one in something the same way that a rare gem would, if set in lead, the surroundings so entirely lack harmony with the style of architecture.

Then again you pass dainty homes, homes where carefully trained vines clamber over the piazzas and porches, where winding walks tempt you to enter and enjoy their graceful curves, where Sweet Peas and Eglantine Roses look happy and contented. Exquisite taste is manifested in the arrangement of buds and shrubs, and we feel sure intelligence, peace and beauty reign within the closed doors. Rules may be given, plans drawn, rare plants selected, but good taste must be used to secure fine effect.

I have moved into the city, and have only a small yard, but your paper is such a welcome visitor that I cannot do without it.—*Miss Isa Bell, Baltimore Co., Md.*

It is No. 1 in every way.—*Davison Greenawalt, Franklin Co., Pa.*

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The Vegetable Garden.

SEASONABLE HINTS.

In deciding upon the location of a garden, character of the soil, natural drainage, exposure to the sun, are important points to be considered, but another essential consideration, which is frequently lost sight of, is that of where the growing crops are most likely to receive the best care. An out-of-the-way garden, however favorable to the growth of vegetables, will, naturally, not receive as frequent attention as one more conveniently situated, and constantly under the eye of the owner.

Although good seeds, fertilizers, favorable soil, etc., are important factors in successful gardening, all these are of little avail when not combined with thorough and frequent culture. In fact, if we were to arrange the requirements for success in the order of their importance, we should place perfect cultivation first on the list. Judicious and liberal cultivation will often produce satisfactory results under most unfavorable conditions, while without it everything else goes for but little.

It is for this reason that we repeat the advice given before to our readers, to beware of undertaking too much. There is nothing more disheartening, more depressing, than the sight of a garden that has grown beyond the bounds of our control. It is like a flood breaking the dam which held the waters in check, subject to our wishes, that when once released sweeps everything before it, and against which all our attempts to stem it prove futile.

If one has more land than he feels sure to be able to till well, it is best to seed it with grass or Clover, or some other green manure crop. There is no better way to regenerate old garden ground. By keeping alternate parts in grass for a few years the soil becomes sufficiently supplied with vegetable matter, the most frequent desideratum in old gardens.

Sowing Seeds.—It is worse than useless to put seeds in the ground before it is dry and friable, especially the more tender kinds.

Seeds sown early should not be covered as much as those sown later in the season. For the first crop of Peas, for instance, three inches is preferable to a greater depth, while for those planted in June or July a covering of six inches is none too much, especially in light soils.

Radishes. With few vegetables is the manner in which they are grown of as much importance as with the Radish. No matter what the variety, if it is not grown rapidly and in proper soil, it will be harsh and tough.

To raise tender and crisp Radishes the ground must be deep, rich, and contain a liberal portion of decayed vegetable matter, together with some sand. For an early crop the situation must be well-sheltered and have a sunny exposure. In dry weather water should be given freely.

Market-gardeners raise them as an auxiliary crop in rows with Beets, Carrots, etc. The seed, which is sown thinly together with the main crop, comes up quickly, and the Radishes are fit for use, and pulled, before they interfere with the other plants.

LETTUCE CULTURE.

Lettuce seeds are so very fine—numbering nearly 30,000 to the ounce—that they are generally sown too thick, and although plants thus crowded may gain a foothold and furnish a supply of salad, they lack the crispness and rich, nutty flavor of well grown heads that have been given plenty of room for full development and quick growth.

The usual method practiced formerly, and followed to some extent now among local gardeners, is to sow the seed for the spring supply in the open ground in September, and after two or three weeks to prick the young plants into cold frames for wintering over, and in the spring to transplant to the forcing pit or open ground. Although plants thus grown are somewhat hardier than without this process no one need take so much pains for an early spring supply. The plants can be started in the hot-bed, the window, or sown early in the open ground and then transplanted separately, or between early Cabbage plants, where they will be out of the way before the Cabbages dispute their claim to the ground. Given plenty of room 15 to 20 inches each way and a fair chance in rich, loamy soil in which Lettuce delights, our best sorts will grow heads of such size and quality as to astonish those who have never

THE OAK-LEAVED LETTUCE.

eaten it in its perfection. Give Lettuce a little extra attention and you will be both astonished and gratified with the results.

There are many excellent and distinct varieties, each particular one having its admirers. Some sorts are decidedly ornamental in appearance. The Green Fringed, for instance, is an ornament wherever grown and is of splendid quality. Hanson and Curled India are very fine, but my favorite for out-door culture is the Stonehead Golden Yellow, which will form solid heads of large size, very crisp and desirable in every particular. The Oak-leaved Lettuce, one of the novelties of the season, is of most attractive appearance. It does not form very solid heads, but as it is slow in running to seed, is of special value for summer cultivation.

W. H. Rand.

HOW LONG WILL SEEDS LIVE?

The question of the vitality of seeds is a practical one that presents itself to the gardener and farmer, as each seed-time returns. With a stock on hand he does not wish to purchase more seeds if those he has are good, yet he cannot afford to run any risks, as it would be poor economy to avoid a little outlay for seeds, upon the germinating and other powers of which his season's success in the growing of crops depends. A ripe and perfect seed is a well-protected, dormant, living plant—as much so as the bear or woodchuck which has rolled himself into a snug ball, and is passing the long, cold winter in inactivity and seeming lifelessness is a living animal. Warmth and other conditions will bring the plantlet as well as the bear from the dormant state, and the functions of nutrition and reproduction will then hold sway. If the winter should be indefinitely prolonged the time would come when the sluggish life of the hibernating animal would cease—the vital spark would go out because of the lack of any more fuel to burn.

So with the seed, it is to be supposed there is a constant though slow combustion, or destruction of substance, going on, which in time exhausts the vitality of the seed. We may see no difference between the living seed and the one that is dead, and the test of applying the conditions for growth decides the question. Whatever may be the real cause of death in seeds, the fact remains, that in the majority of kinds after a few years at most the seeds die. Fresh seeds should therefore be sown, as old ones are either dead, or, if alive, will generally produce plants with vigor impaired.

There have been many experiments to determine the average duration of the life of some of our most common seeds. For example, out of 100 grains of Wheat, kept one year, 96 grew; out of the same number kept two years 84 grew; of three years, 60 grew; of four years, 43 grew; after six years only six plants were obtained. Those kept for seven, eight, nine and ten years were all dead. Very much the same results obtained with tested grains of Rye. Oats and Barley will keep for eight years without a decrease in the per cent of living seeds.

The so-called "Mummy Wheat" which attracted so much attention several years ago passed through so many hands before being planted, that even some grains of Indian Corn were found in it. All scientific men agree that the story is a hoax, and even if the grain had been preserved the life would have gone out hundreds of years ago.

Much work on the vitality of seeds has been done by a committee appointed for the purpose by the British Association for the Advancement of Science. It experimented on 364 species belonging to 288 genera and 71 different natural orders, or families of plants. Only 33 genera retained their vitality over two years; only 22 genera over 20 years, and only two genera over 30 years.

The vitality of seeds depends somewhat upon the manner in which they are cured. They should be well dried and kept so. Seeds in large bins may "heat," and even germinate when they are killed, just as in the case of the malt grains. Seeds will withstand severe cold much better than great heat. Seeds that have been exposed to the low temperature of the polar regions and even a still more extreme cold by artificial means have come out with their vitality seemingly unimpaired.

Any heat that will cook, so to speak, the seed destroys its life. A seed will withstand a much higher dry heat than when placed in a liquid. Spores of some Fungi will live after being boiled in water for some time; but this is exceptional, even among these low forms of plants.

B. D. Halsted.

HEELING IN VEGETABLE PLANTS.

Plants ordered from a distance are not always received at a favorable day for planting, and on the treatment they receive between the time of arrival and planting depends, not unfrequently, their future success. If the day happens to be a damp or cloudy one, they may be planted out at once, but if the weather is dry and sunny, a safer plan is to heel in the plants carefully in a damp and shady place until a more favorable day occurs. It is dampness in the atmosphere—not in the soil—that is most important at the time of planting.

SALSIFY.

This root, commonly called Oyster-plant, is of very easy cultivation and should be in every well-managed garden. It is a hardy biennial, maturing late in the fall of the first year, can be left in the ground in safety, and throws up the seed stalk the following season. A large bud and a purple blossom mature a pod that opens much like a Thistle, full of long, club-shaped seeds. The English sparrows carry these off as fast as they open sufficiently, and the seed has therefore to be gathered every day, to save it. These abominable birds carry off my Lettuce seed in the same way. I have not found the seed to germinate well the second year, although some claim vitality for it for four years.

The seed planted early in the spring, at the time of the Onion or Carrot, will be sure to sprout. I sow rather thin, as it is difficult to pull up the young plants after once taking root; sown in rows one foot apart it is easily kept clean, as it has an upright habit of growth. The ground needs to be worked deep, and made rich for it; the normal size of the roots is about one inch in diameter. I have had them larger; but it is unusual. They need the whole season to perfect their growth, but can be eaten as soon as the roots are big enough to scrape for boiling.

I usually mow the tops before hard frosts sap the vitality of the roots. A short top will spring up afterwards, that is left on at the time of digging. For marketing, the roots should be straight as in the illustration; but the side shoots have often to be removed to gain this appearance; this should be done at the time of digging, as it makes them more convenient to handle subsequently. I pack them close together in soil on the cellar floor, 4,000 roots in a space of 36 feet square. They are held in an upright position by the earth, and closely surrounded by it; the tops remain green, and some growth is made, while the root will keep fresh till May. If these conditions are not provided and the roots protected they will wilt very rapidly. The principal danger is from rot late in the season. I find them a profitable market crop as they can be grown quite near together if they do not touch each other, but a hard soil makes them "straggly."

In preparing the roots for the table, one needs to use some care, as the milky juice of the plant stains the hands like the Dandelion. To avoid this and the discoloring the roots, which will turn black if left exposed to air after scraping, they should be placed in the water in which they are to be boiled, immediately after scraping. They may be prepared in various ways, and when properly cooked, the oyster flavor in them is strongly marked. As a vegetable they are far superior to Parsnips; but I have noticed that at the North they are not as much appreciated as among southern people, and by

BUNCH OF SALSIFY.

French and Germans.

The Scorzonera, a black-skinned variety, having a seed shaped like a wooden shoe-peg, differs in some respects from the Salsify. The leaf is lighter green, the root is more brittle, has a different flavor, does not grow in as good shape as the Salsify, and will not keep as well. Their uses are the same, but for general cultivation the Salsify gives more satisfaction than the black-rooted variety, and will on the whole grow to a larger size.

W. H. BULL.

THE WONDER OF FRANCE BEAN.

This novelty represents a peculiar tribe of Beans with seeds of bright green color. It is immensely productive and very early, the leaves falling off just before the maturity of

WONDER OF FRANCE BEAN.

the pods, thus causing quick ripening. It makes a very good string bean, but its main use is as a shell bean. When cooked it retains its attractive color, and is of a rich, delicate flavor, similar to the Lima Bean.

FIRMING THE SOIL.

Small, fine seeds should always be covered very lightly, and the best way to accomplish this is to scatter them evenly over the smooth surface, and then sprinkle fine soil over them just enough to cover them, and press down with the hand, or a light hoe. This will greatly facilitate their germination, as in order to sprout and grow, it is absolutely necessary that each seed should be in immediate contact with the soil. The omission of this firming of the soil is a more frequent cause of failure than the want of vitality in the seeds themselves.

Seeds should never be sown when the ground is wet, much less should the soil be pressed down when in this condition, else it will surely bake after a few dry, warm days and the tiny sprouts will not be able to force their way through it, and the seeds will rot. This applies especially to stiff, clayey soils, which should not be firmed unless they are dry and mellowed.

The best advantages of firming are secured in hot weather, when the soil is so dry that seeds placed in it loosely would not germinate. When the ground is dry and hot even the heaviest clay soils will bear any amount of firming.

N. J. SHEPHERD.

FRESH SPROUTS.

A good wheel-hoe is as much superior to the common hoe for cultivating a garden, as is the mowing-machine to the sickle in the hay-field.

Size and plumpness in seeds furnish no more reliable criterion as to their intrinsic quality than they do with men and women. It's the blood that tells.

A farmer in Salem County, N. J., last season raised 83 tons of Tomatoes on six acres of land. The crop was sold to the canning establishment for $7 per ton.

At a recent meeting of Maryland farmers, the general opinion was in favor of northern-grown seed Potatoes, as better adapted for that latitude than home-grown ones. The Beauty of Hebron was considered the most profitable variety.

Bran is highly recommended by several intelligent farmers, as a manure for Potatoes. Waldo F. Brown considers it cheap for this purpose, at $15 per ton. Damaged bran, which is just as good as the best, can often be bought for $5 per ton.

Frank L. Burt believes that the farmers of New England can raise Corn at less cost than they can buy it from the West. From an acre of land to which were applied 600 pounds of Stockbridge Corn Fertilizer he has raised 103 bushels of shelled Corn. This is what a boy can do; farmer Burt is only eighteen years old.

W. H. Bull is of the opinion that where the right conditions exist a man can support a family of six persons and sometimes more, on eight acres, and do it year after year. [Eight acres would seem a large farm to some of the New Jersey market gardeners who support themselves and their families on one and two acres of land.—ED.]

The Fruit Garden.

SEASONABLE HINTS.

Considerable planting will, on account of the lateness of the season, have to be postponed till this month, and some of the hints given for April will be found applicable now. But it should be borne in mind that the later in the season trees are planted the more important it becomes to prune severely, and to give careful attention to every detail.

Strawberries may be successfully planted when in full bloom, even provided all the blossoms and buds are pinched off and proper care is given them. Between the many methods of planting recommended, the novice is often left in doubt which one to adopt, but if he will examine them discriminatingly he will find that the principles which underly all successful systems are the same:

Good soil of liberal fertility, deeply and thoroughly worked, so that it is mellow and friable at the time of planting.

Young and thrifty plants of good pedigree, and of varieties adapted to the soil and climate.

Scrupulous care in protecting the roots, at all times, against exposure to sun, winds, and air.

Placing the roots in as natural a position as possible, spreading them out straight at full length without turning them over. If the roots are thought too long, cut them off, but never bend their ends over.

Never to place them deeper in the ground than they stood in the propagating bed. The heart of the plant must be free to light and air, and not covered with soil.

To cover every part of the roots with fine soil to be pressed down firmly; then level with soil, leaving it loose on the surface.

In very dry weather water should be given in the evening, but unless one is prepared to soak the ground thoroughly it is better not to give any water at all.

Other points, of minor importance, might be mentioned, but if these directions are carefully and judiciously followed, not one plant in a hundred need be lost.

The *Currant Worm* is becoming so destructive in some localities as to discourage the planting of Currants and Gooseberries, and yet there are few as infallible specifics as the one we have for this pest. A teaspoonful of powdered White Hellebore, dissolved in two gallons of water and applied to the foliage on the first appearance of the worms, is a sure remedy, though it usually needs applying a second time later in the season.

Old Strawberry Beds. It is generally easier, and cheaper, and better in many respects to plant a new bed than to clean and keep in order an old one. Many successful growers never take more than one crop from their plants, that is, plants set out now will bear a full crop next year, after which they are turned under.

Peach-Trees should be examined again for borers that may have escaped previous notice. The larvæ are easily detected by the exudation of gum at the opening of their burrows. By removing some soil around the base of the stem they may be found easily and dug out, which is the most effectual remedy against this insidious pest.

RE-PLANTING FRUIT TREES.

In many instances, fruit trees fail to grow luxuriantly, even when the soil is kept clean and mellow around them. Sometimes a tree will send out only an inch or two of growth each season; whereas no fruit culturist should be satisfied with a growth, on every side of the tree top, of less than one foot.

When a young tree fails to grow satisfactorily, the lack of growth may be remedied sometimes by re-planting, sometimes by cutting back, and sometimes by mulching the ground around it. If the tree does not appear to be firmly rooted, the body does not enlarge as much as it should, and the yearly growth is short and small, I have always found it advantageous to dig up such trees, about the time the buds begin to expand, and re-plant them. Should roots be few and weak, it will be found best to cut the tops back severely; and in many instances to remove the entire tops, leaving nothing but a bare stub.

Sometimes dwarf Pear-trees on Quince roots cannot be made to grow luxuriantly. When they are not firmly rooted, they had better be dug up, and set out again in the same place. But when such trees are re-planted, the ground should be dug up to a depth of at least 20 inches, over an area of four or five feet in diameter. Then the tree should be placed so deep that the junction of the Quince-wood and the Pear-wood will be at least three or four inches below the surface of the ground.

Just before such trees are placed in position, with a sharp knife gouge out pieces of bark about as large in diameter as a ten-cent piece, on the bulb of the Pear-wood. This cutting into the bark, at that point, will induce the starting of numerous roots all around the stem of the tree. The soil should be packed firmly around the stem of such, as close contact of the earth with the tree is exceedingly important. Roots will then be thrown out from the Pear-wood; and if the soil be kept clean and mellow, the tree will take a new start, grow luxuriantly, and bear abundant crops. After the lapse of a few seasons the Quince-wood will decay; and the tree will be sustained solely by Pear-roots. When re-planting such trees, it is advisable to mix about a peck of slacked lime and a half bushel of ashes with the surrounding soil.

When Pear-trees standing in grass ground fail to make a satisfactory growth, it will avail but little, if anything, to dig them up and plant a little deeper, unless the ground around them is kept free from weeds and grass. Young Pear-trees will not thrive satisfactorily on grass ground unless the soil is unusually fertile, having a somewhat porous subsoil beneath it. It will be found an excellent practice to spread some mulching material around each tree, to subdue grass and weeds. Coal ashes answers this purpose as well as anything else. S. E. T.

EFFECT OF FERTILIZERS ON STRAWBERRIES.

A series of experiments made by J. B. Rogers, leads him to the conclusion that the nutriment given to Strawberry plants does not affect the vegetative and reproductive organs of different varieties alike. Although little or no attention is given to these influences in ordinary Strawberry culture, he found them so plainly marked as to establish three separate classes, based upon this action of manures.

1.—Those in which the highest type of vegetative, flower and fruit growth would seem to result from mixed barnyard manures, or commercial fertilizers containing but little potash. Primo, Sharpless, Bidwell, Triomphe de Gand are representatives of this class.

2.—Those in which the highest type of vegetative, flower and fruit growth would seem to result from the use of potash, in addition to the fertilizers of the first class. Among these are Miner and Seth Boyden.

3.—Those which seem to be indifferent, and are possessed of a remarkable resistance to the evil effects of varied fertilizers. The blossoms remain very constant but the texture of the fruit varies greatly, as for instance in the Charles Downing and in the Cumberland.

RENOVATING FRUIT TREES.

An incident which occurred some years ago in my garden taught me an easy way to infuse new life and vigor into young trees of sluggish growth.

A cat was accustomed to scratch on the body of a small Pear-tree, and before I was aware of it the entire bark around the tree, for about a foot up, was dry and dead. Considering the chances for the tree's survival very small, at best, I sawed off the stem just below the lacerated bark. This was done about the middle of May, and the wound was thickly covered with grafting wax.

The first season a new stem of over five feet grew from the stump, and four years afterward the tree had reached double the size and bore twice the amount of fruit of any of the other trees planted at the same time in the same field.

Profiting by this experience, I have since that time never hesitated to saw off every limb from bark-bound and crooked-branched unsatisfactory and slow-growing trees. New sprouts will start at once, the trees will regain new life, grow luxuriantly, and eventually form large, symmetrical tops. Of course where there is a deficiency in the soil, or where standing water settles around the roots, neither replanting nor pruning can do any good before the fundamental causes are removed. ORANGE.

SELECTION OF PEARS.

The following Pears are recommended by Josiah Hoopes in the N. Y. Tribune as proving generally satisfactory throughout the Middle States. Summer Doyenne for very early; very handsome and very good. Bartlett, which no home can afford to dispense with, and always reliable. The old time-honored Seckel, as the standard of perfection, but inclined to overbear. Anjou, for a strong, healthy grower, and other good qualities. Lawrence we cannot dispense with as a delicious, handsome fruit for the Christmas holidays, and last, the newest of all, Butler, because for twenty years it has proven not only reliable in several sections, but the tree is among the healthiest of the entire list. Planters should bear in mind, however, that all such lists as the above are only suggestive, and that no thoroughly reliable set of fruits can be named, suited to all localities, with our varying soils and climates.

HOW TO CROSS-FERTILIZE FRUITS.

It is often remarked that we have too many varieties. So we have, but surely, we have not too many good varieties. Our fruits that possess the qualities of the Baldwin Apple and Bartlett Pear are far too few. Until we have so many such varieties that all the delicious fruits of our land are yielded in such abundance that even the thrifty laboring man shall know no lack, we have not enough.

Cross-fertilization of varieties offers the shortest and surest means of securing improvement. The principles that apply in stock breeding apply as well to plants. By crossing two varieties, each of which has one or more valuable qualities highly developed, we may hope to obtain a variety combining the desirable characters of both.

FIG. 1. CROSS SECTION OF PEAR BLOSSOM.

It is an easy matter to select varieties that have one or two excellent qualities. For example, the Crescent Strawberry possesses great productiveness and is sufficiently firm for market purposes, but it is lacking in size and quality. Hervey Davis, on the other hand, has size and quality but is lacking in firmness and productiveness. By crossing these, we may hope to obtain a new variety possessing the good qualities of both.

There are two ways of cross-fertilizing varieties. In one, which may be called the chance method, the varieties intended as parents are grown in close proximity, so that a portion of the flowers will become crossed in the natural process of fertilization. It is a loose method, though it cannot be denied that excellent results have often been obtained by it. It was by this method that Prof. Kirtland produced many of his improved varieties of Cherries. It has the advantage of extreme simplicity, but also the disadvantage that the grower is obliged to raise many uncrossed seedlings, as he has no means of knowing what flowers have or have not been crossed. It has the further objections, that the grower can never be sure of the parents of his new variety and that it can be practiced only with varieties that are growing very near together.

The second, which may be called the scientific method, requires considerable skill and patience on the part of the grower, but it avoids the uncertainties of the chance method, while it may be practiced between two varieties growing an indefinite distance apart, even many miles.

To practice the chance method one scarcely needs other directions than the hint already given. The scientific method, however, requires some slight botanical knowledge on the part of the operator.

The reproductive organs of a plant consist of the stamens and pistils. In fig. 1, which is a cross section of the blossom of the Pear, the pistils are the long organs that rise from the center, while the shorter ones about these are the stamens.

Fig. 2 is a cross-section of the Strawberry blossom. Here the stamens and pistils grow out of the receptacle, the central part, which is the future berry. The stamens are much larger and more prominent than the pistils. The swollen part at the top of the stamen, called the anther, contains a fine dust, a portion of which when mature must be deposited upon the stigma—the terminus of the pistil—or a seed cannot be formed. A pistil that receives pollen from the stamens of the same flower is said to be *self-fertilized*. When its receives pollen from another flower it is said to be *cross-fertilized*. When the pistil of one variety is fertilized with pollen from another, the seed which follows, when planted, produces what is called a *cross* or *hybrid* and usually illustrates some of the characters of both parents to a greater or less degree.

It is evident that if we desire to cross-fertilize a flower we must first prevent the pistil from being fertilized with pollen from the same flower. It is evident, also, that if we are to be sure that the pistil is fertilized with pollen of the variety that we desire to be crossed with it, we must prevent the entrance of all other pollen. In order to effect this, it is best to remove the stamens just before the flower is ready to open its petals, and then enclose it in a paper bag.

Choose a flower that is nearly ready to open and with a pair of fine pointed tweezers fold back the petals and remove the anthers, taking care not to injure the pistil in any way. If desired the petals may be removed entirely without detriment to the reproductive organs. Then slip a light paper bag over the prepared flower and tie it about the stem. The next day, or at longest, the second day after, choose a flower from the other variety to be used as a parent, upon which the pollen is mature, and after carefully removing the bag, deposit a portion of the pollen upon the stigma or top of the pistil of the prepared flower.

If a stamen is mature, a little of the pollen will usually adhere to the finger when the anther is touched. To apply the pollen the stamens may be carefully rubbed directly against the stigma, or a camel's hair brush may first be gently rubbed upon the anthers and then upon the stigma. I consider the first method preferable when it can be used; it is well, also, to wet the stigma by depositing a minute drop of water upon it with the tweezers before applying the pollen, to aid the latter in adhering. Having applied the pollen, replace the paper bag.

a. b.

FIG. 3. GRAPE BLOSSOM.

As the stigma may not be in a proper condition to assimilate the pollen at the first application, it is well to apply more pollen the following day. At the end of a week the bag may be removed, when, if the fertilization has taken place, the miniature fruit will have already commenced to swell. It is, of course, necessary to carefully label all crossed fruits for identification.

With strictly pistillate varieties of the Strawberry, that is, those which form no perfect stamen, of course it is unnecessary to remove the anthers, though it is important to enclose the blossoms in paper bags before the petals open, to avoid impregnation with other pollen.

With the Grape, the blossom of which is illustrated in fig. 3, artificial crossing is more difficult than with the larger fruits, owing to the smallness of the flowers. In the blossoms of this fruit the petals open from below upwards. *A* represents a blossom in which the petals are opening, and *b* the same after they have fallen. The pistil is the large, fleshy organ shown in the center of *b*, surrounded by the much smaller stamens. In the Grape blossom, it is important to remove the stamens before the petals begin to spread at the bottom, as self-fertilization often takes place before they are fully open.

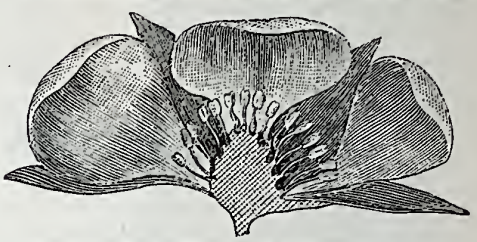


FIG. 2. CROSS SECTION OF STRAWBERRY BLOOM.

"ELM."

SHORT CUTTINGS.

Summer pruning Grape-vines is thought to be productive of mildew.

Chas. A. Green is of the opinion that it does not injure Apples to become frozen if they are not molested and thaw slowly and naturally.

Dr. Hoskins of Vermont has well said that very few know the productiveness of the Strawberry under good cultivation.

Grafting Grape-vines is not, as one of our readers suggests, "a new-fangled idea," but was practiced by the ancient Romans 2,000 years ago with as much, if not more, skill and success than it is done to-day.

California's first attempts at Raisin production were made 19 years ago. The following year about 1500 boxes were made, and the industry has rapidly progressed. Ten years ago the crop amounted to about 40,000 boxes. This year it is estimated at 200,000 boxes.

The first prize at the New Orleans World's Fair for the best and largest collection of Apples, not exceeding two hundred varieties, by any horticultural society in the northern district, was awarded to the Wisconsin State Horticultural Society, and in the southern district to the Missouri Horticultural Society.

Notwithstanding the very cold weather of the past winter, Oranges and Bananas offered in our markets were in better condition than in former years. The loss of many thousands of dollars has taught the steamship companies that it does not pay to throw cargoes of southern fruits on the piers on arrival, regardless of the temperature.

The Flower Garden.

MAY.

How softly comes the breath of bloom
From quiet garden closes!
And, blended in a rare perfume,
The royal scent of Roses!
How tender is the touch of May
While gentle winds are blowing,
And in a sweet, yet silent way
All sylvan things are growing!

How brilliant is the morning dew
Amid the fields of Clover!
Beneath a stainless arch of blue
The mock-bird is a rover;
His songs are echoed o'er the hills,—
Their boon of music bringing,—
Till all the land with wonder fills
To hear his rapturous singing!

How gracious is the light that gleams
Across the dancing billows,—
Or with a chastened splendor beams
Above the drooping Willows!
How fair are May's benignant feet
O'er rugged vales and mountains,—
And how her magic pulses beat
Beside the brooks and fountains!

What sudden fervor thrills her blood,—
Through grove or garden straying,—
To linger o'er some tardy bud,
And chide its long delaying!
What pure contentment fills her breast,
Through thick-leaved forests roaming,
To find the peaceful birds at rest
Beneath the dews of gloaming!

What month so musical and bright,
So rife with vernal glory,—
All garmented in air and light,
Like some Arcadian story!—
Oh! fragrant is the breath of May
In tranquil garden closes,—
And soft yet regal is her sway
Among the spring-tide Roses!

—*William H. Hayne in Good Cheer.*

SEASONABLE HINTS.

At this season of preparing and laying out flower-beds, a bit of our last year's experience may perhaps serve as a seasonable hint, especially to amateurs.

Intending to arrange a mixed flower border, four feet wide, by 200 feet in length, in a most unpromising situation, with a cold, heavy soil that had not received any fertilizers in several years, we spaded the ground deeply in the fall of 1883. It was then covered with a coat of three inches of fresh stable manure, and over this was spread a layer of raw muck, thick enough to cover the manure completely. During winter, sifted coal ashes as they are taken from the furnace room were spread over this to a depth of about two inches.

In the spring following, the appearance of the prospective flower-bed was anything but encouraging. As soon as the ground was dry enough it was spaded with a fork, mixing the different strata as much as possible. Two additional spadings were given, at intervals of a few weeks, before sowing and planting, which was not done before June.

As the result of all this preparation the ground remained as mellow and uniformly moist throughout the season as could be desired, and the healthy growth and luxuriance of the hundreds of different plants that grew in it we have never seen equaled.

That much of this success was due to the coal ashes cannot be doubted, as the adjoining ground, treated exactly alike, less the ashes, gave far inferior results.

THE GLADIOLUS.

We have gorgeous flowers, like the Dahlia, which make up in vivid colors what they lack in delicacy; flowers to be admired at a distance rather than close by; then we have flowers of the utmost delicacy of texture and of great beauty of color, like the Iris, which comes early in the season, and vanishes suddenly. Occupying a middle ground is the Gladiolus, a flower with delicate petals and yet vivid enough to make even a Dahlia envious. It is as beautiful as the Iris, and more easily grown than the Dahlia, and is one of the most effective flowers that we have for the garden.

It is not necessary to start it into growth in the house. Wait till Corn-planting season comes. Then dig up the earth where you want it to grow to the depth of a foot and a half. Make it rich by adding some thoroughly rotted manure from the cow-yard. Mix the earth and manure well together, and if it does not seem light, add some sand. The Gladiolus does not like a heavy soil to grow in. Plant the bulbs about four inches beneath the surface. I would advise you to plant at least half a dozen in a clump. The effect will be much finer where there is a large number of stalks than where there are few, and as the bulbs do not often send up more than two or three stalks it is necessary to plant several bulbs together if you would produce much strong effect.

As soon as the blossom-stalks begin to shoot up, set some neat stakes among them, to tie the stalks to later, for they will be top-heavy when the buds begin to expand, and a wind often breaks them down. Paint the stakes green, if convenient, for they will be inconspicuous, and you want nothing to draw attention away from your flowers.

The rarer varieties of Gladiolus are very expensive, some of the newest ones being listed at six dollars in the catalogues of our most extensive growers. Now few of us can afford six-dollar bulbs for our little gardens, but we can have others in the place of these costly ones almost, if not quite, as beautiful, for little money. There are dozens of very beautiful varieties offered at ten and fifteen cents, and for twenty-five and thirty cents you can get some in most exquisite shades. If you do not care for named varieties, you can get mixed bulbs at 75 cents and $1 per dozen which will afford you excellent satisfaction, and as many of them are seedlings which have not bloomed, you stand a chance of getting some very choice new varieties. You will probably be just as well pleased with these mixed collections as you would be with selected named varieties.

The Gladiolus ranges through red and all its shades,—pink, scarlet, crimson and maroon, and we have it in purple, orange, pale yellow and white. Often a flower combines two or three of these colors, in different shades and markings, and the effect is superb. The flowers are borne on one side of a long spike, and are somewhat like the Amaryllis in shape. They are wonderfully delicate in texture. There is nothing coarse about them, not even among the very poorest of the many varieties.

It is a most useful plant for furnishing flowers for vases, in the house. The long stalks are invested with a dignity and grace second only to that of the Lily. Combine them with some pleasing green, which this plant does not furnish for such uses, and you can have no finer ornament for your rooms. The undeveloped buds grow and develop after cutting, if the water is kept fresh.

EBEN E. REXFORD.

CARNATIONS.

The present perfection of the Carnation, said C. M. Atkinson before the Massachusetts Horticultural Society, is the result of long and patient industry. At the beginning of the eighteenth century it numbered between five and six hundred varieties. Throughout the civilized world it is an especial favorite for its simple and graceful beauty, and above all for its delicious fragrance. In Europe it is universally cultivated in pots, but that method is totally unsuitable here. Good, deep garden soil (yellow loam is preferable) enriched with thoroughly rotted cow manure, some leaf-mould, and, if the soil is too adhesive, some sand, are requisite.

Dig deep and thoroughly, and when the weather is fairly settled, set out the plants, nine inches by twelve apart; stir the surface frequently, and as soon as they begin to throw up their flower stems remove all but one, which tie to a neat stake. The weather about the time of flowering is usually bright and hot, thus prematurely hastening the development of the flowers. An evening visit with the water pot, sprinkling on and around the plants, but not over the flowers, is beneficial. Shade is necessary in the hottest part of the day. For the real amateur, cotton cloth, attached to a roller and fixed on a neat skeleton framework so as to let up and down, is the thing. Second-hand fishing nets, or seines, stretched double over stakes sufficiently high to walk under, answer very well, and need not be moved until the bloom is over. In Europe they display six or eight flowers, supported by a stake, but the speaker likes a good mass rather than a few.

As soon as the plants are ready for layering it should be done, thus obtaining strong plants by the middle or end of September, when they should be transferred to their winter quarters. For this purpose a bed should be made of the size of the cold frame, and the plants set thickly in it. By the end of November strew two or three inches of dry tan, or, what is preferable, Pine needles, among them, put on the frame, place the sashes over them, but give all possible air, excluding nothing but heavy rains, snow and extreme frost, and when May comes round again transfer the plants to more agreeable and attractive quarters.

TUBEROSES.

Many bulbs are lost every year by being planted out too early. The Tuberose is a native of tropical East India and cannot thrive in our climate except in hot weather. In this latitude it is not safe to plant out-doors before June, but by starting the bulbs in pots in a hot-bed or warm room, and transplanting to the open ground in June, they may be had in bloom several weeks earlier than by planting directly in the border. They require a deep, rich and rather moist soil, and the sunniest position available.

CHOICE ROSES.

The Rose is everybody's favorite, and many, no doubt, would prefer a bed of Roses to anything else. There is no reason why they should not have one. Small plants, which are better for the purpose than large ones, can be bought almost as cheap as some of the ordinary bedding plants; and when it is remembered that a bed of Roses will last many years, it may justly be concluded that it is one of the most economical that can be made. The soil, however, should be made very rich with old manure, and, if convenient, a liberal sprinkling of bone dust. A top-dressing of the same material should be repeated every year. Rich soil makes rich Roses.

It must be remarked that all Roses are not hardy, and all are not equally well adapted for bedding. Two classes of Roses may be used, the Hybrid Rémontant and the Tea. The latter, however, are not hardy far North, and even in the latitude of New York need some winter protection. I prefer the Tea Rose for bedding. Both classes are commonly called perpetual bloomers. The Teas really are such; the Hybrid Rémontants are not, though many of them often bloom a second time in the autumn. The true character of a Rose is not fully developed till the plant becomes well established in the ground.

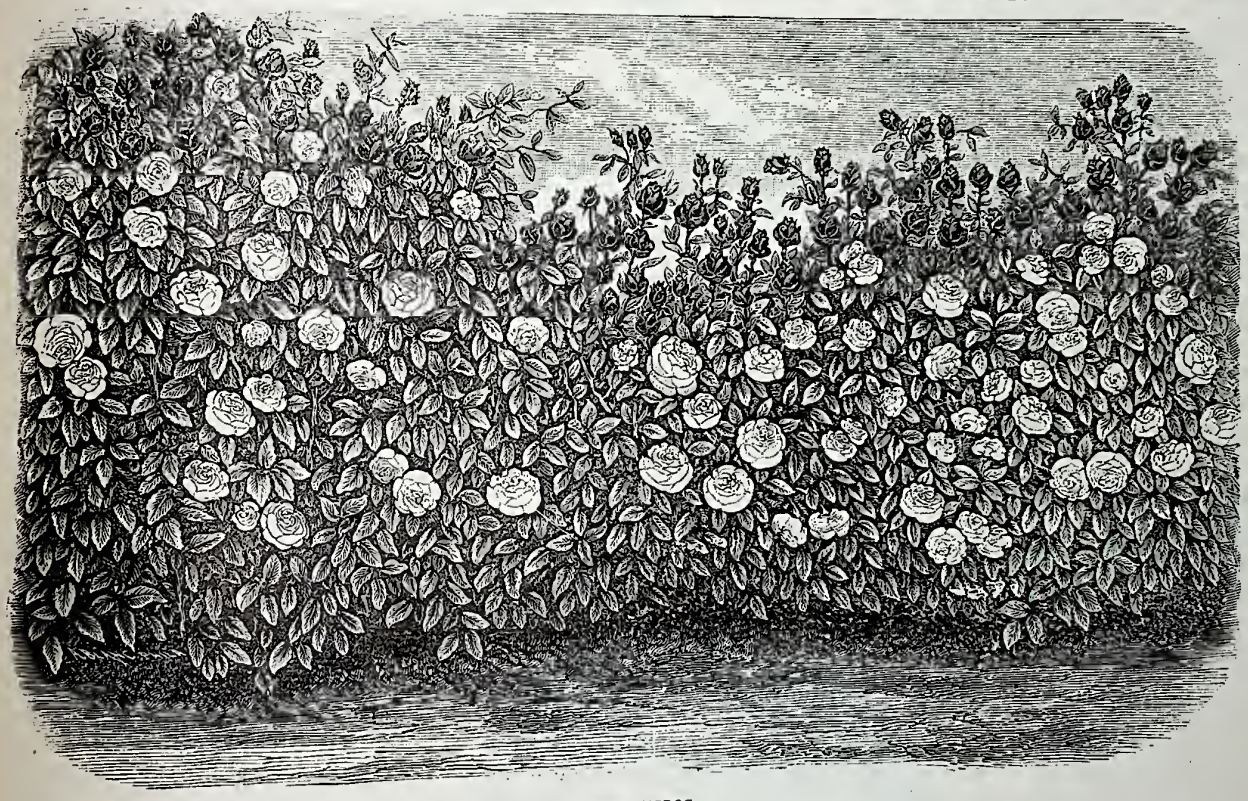
The following Hybrid Rémontants are hardy, strong growers, free bloomers, fragrant, and good plants for a bed: Paul Neyron, Marie Baumann, Baronne Prevost, Alfred Colombe, Annie Wood, Rev. J. B. M. Camm, John Hopper, La Reine, Mabel Morrison, Anne de Diesbach, Caroline de Sansal, Pierre Notting, Charles Margottin, Marguerite de St. Amande, Hippolyte Jamain, François Michelon, Comtesse Cecile de Chabrillant, Madame Victor Verdier, Abel Grand, Gaston Leveque, Harrison Weir, Jean Liabaud, Madame Gabriel Luizet, Prince de Portia, Queen of Waltham, General Jacqueminot. From this list a good selection can be made. Get all the plants on their own roots, and not budded.

The following Tea Roses are among the hardiest and best for bedding, bearing mostly full flowers of delicious fragrance. A loose, open Tea Rose, however beautiful in the bud, yields but little satisfaction in the open air. The list is as follows: Bougère, Madame Lambard, Rubens, Sombreuil, Angele Lyon, Monsieur Furtado, Pauline Labonté, Marie Ducher, Madame Bravy, Comtesse de Nadaillac, Marie Van Houtte, Caroline Kuster, Homer.

Both of these lists might be greatly extended, but hardly improved for the purpose in view. I will add, however, a few other excellent Roses from other classes, good enough for the choicest collection, and all constant bloomers, though all are not fragrant. Magna Charta, a Hybrid China. Agrippina, a Bengal. Hermosa, Malmaison, Bourbon Queen, Geo. Peabody, and Queen of Bedders, all Bourbons. La France, a Hybrid Tea. Mignonette, Paquerette, and Cecile Brunner are the new Polyantha Roses. They are very dwarf, bear tiny little double flowers in large clusters, are very constant bloomers, and will be very popular when better known. Their dwarf habit makes them very useful for an edging or outside row. Hybrid Rémontant Roses should be planted not less than three feet apart, and Teas not less than two.

Tea Roses are not thoroughly hardy at the North, and they should therefore have some kind of winter protection, which should not be put on, however, till the ground begins to freeze. I have found nothing better than a covering of straw, leaves, or coarse litter from the stable, with a few evergreen branches or something of that kind to keep the covering from blowing off.

P. B. MEAD.



A ROSE HEDGE.

LIKES AND DISLIKES OF THE CHRYSANTHEMUM.

What Chrysanthemums *do* like, says John Thorpe, President of the Society of American Florists, is:

To be planted firmly, in rich soil; plenty to eat and drink; to have at least four or five hours' sunshine a day; to be mulched after July 1st with grass or manure; to be well and often soaked with water or weak manure-water from August to October; to be divided every year; to be tied up so as not to be broken by the wind; to be protected from severe frosts when in flower.

What Chrysanthemums *don't* like, says the same unexcelled authority, is:

To be planted loosely, in poor soil; to be planted beneath the shade of trees, where there is no nourishment; to be starved; to be dry; to be smothered all summer by vines or other plants; to be left for years without dividing; to be placed where the sun never shines on them; to be blown over by the wind; to be severely frozen when coming in flower; to be in hot, dry and gassy rooms.

OUR FLOWER BASKET.

Tigridias should not be planted before all danger from frost is past. There are now red, yellow, and white varieties.

The most favorable time for planting and dividing herbaceous plants is spring. We would rather plant even late in spring than in autumn.

A fine bed could be made, says James Vick, with a Cactus or Yucca for the center, surrounded by Echeveria, raised a little, then Alternanthera, first a dark variety, followed by a light shade, surrounded by Echeveria. Perhaps the Echeveria running through the Alternanthera, forming some garland or ribbon-like design.

The Window Garden

AND GREENHOUSE.

THE WINDOW GARDEN FOR MAY.

If not already done, sow Chinese Primroses and grow them in a cool, airy, faintly-shaded place on the piazza, or in a window frame.

Keep growing the young Cyclamens of this year's sowing, but the plants that have bloomed may be allowed to go to rest now. Don't frizzle them in summer, but lay them aside in a cool, shady place or plunge them out of doors an inch or more under ground.

Calceolarias or Cinerarias should not be sown for a month or two yet. Pot the remainder of your Gloxinias and grow to bloom in a warm but shaded place; there is no place so good for Gloxinias in summer as a shaded cold frame.

Show Pelargoniums or Lady Washington Geraniums, as they are commonly called, will now be in perfection. When they have done blooming don't dry them off very much; I would advise you, rather to plant them out in a slightly shaded spot, use their young wood as cuttings, and having secured what you want of young plants, throw away the old ones. My best blooming plants are only six months old from the cutting. Fuchsias should be at their best condition during May.

OLD BULBS.

Don't throw away the bulbs of Hyacinths, Tulips, Narcissus, and the like that you have grown in pots or boxes for winter flowers, but instead put them aside in some out-of-the-way place, and after the leaves die down then stop watering. Next fall plant out these bulbs in a cold frame or in some suitable place in the garden and let them stay there. The Hyacinths will produce a few weak but acceptable flowers about Easter; after a year or two the Tulips and Narcissus will become strong again.

CACTUSES.

After hardening them off well, put every kind of Cactus out of doors. If you take them from a shady place and set them out at once in a sunny position they will probably, after a little while, look very sick, blister, blotch and peel. Vigorous kinds like Cereus and Opuntias, if planted out, are apt to grow beyond bounds; better plunge them. But all Cactuses that have poor roots or are in bad health, should have the old soil shaken from their roots, and then be planted out in a warm, dry, sunny place.

Phyllocactuses set in shady places in summer may produce plump, green growths, but if you want flowers next spring better far have the shorter, redder growths made in the sunshine.

Epiphyllums, however, prefer a little shade in summer. Wet is very injurious to Cactuses in summer, therefore see to it that they are not under the drip of trees, that water cannot lodge about them, and in the case of the choicer Mammillarias be prepared to protect them overhead against protracted wet or misty weather.

When Cactuses are growing they like rich, porous soil, and I have found that they especially enjoy gritty, enriched earth. But the necessity of lime rubbish and pounded brick-bats in the soil, as so often recommended in old books, is simply nonsense.

GERANIUMS FOR WINTER BLOOMING.

Don't plant out these in beds you wish to retain intact all summer, but instead, in some open, sunny place by themselves, as you should lift and again pot them about the end of July. If you get stout, stocky plants well rooted and established in their pots before cold weather comes, then you may reasonably expect an increasing supply of flowers from October till May, but if you depend on the Geraniums you lift and pot in September or October, you need not expect them to come into good bloom again before next February. The single-flowered varieties are free-bloomers, but if you want the blossoms for cut flowers the double varieties are better than the single ones.

Heliotropes should be treated in the same manner as Geraniums.

YOUNG PLANTS FOR WINTER FLOWERS.

Of a good many plants, young stock is better than old for winter use. Prepare a piece of ground where you can keep all the kinds together; in this way it is easier to attend to watering, mulching, pinching, staking and tying them, than it would be were they scattered about through the garden. Prominent among these are Carnations, Bouvardias, Libonias, Stevias, Sericographis, Justicias, Paris Daisies, Poinsettias and Browallia Jamesoni.

PLANTS THAT PREFER A LITTLE SHADE.

A shady place, as on the north or east side of a building, hedge or fence, but not under the drip of trees, will suit the following: Fuchsias, Begonias, Camellias, Azaleas, Myrtles, Crotons, Dracenas and Palms. A southwest exposure especially should be avoided. Some of these plants will thrive in the sunshine but they will do better in the shade.

PLANTS THAT LIKE A SUNNY EXPOSURE.

Hibiscuses, Abutilons, Cape Plumbago, Poinsettias, Ficuses (Rubber-plants) of sorts, Century Plants, Oleanders, and vines as Passion-flower, Thunbergias, Clerodendrons, Cobæas, and Ipomœas. If not properly hardened off before being planted or plunged out of doors, these plants are apt to be scalded, and some of them, perhaps, completely defoliated; but if well inured to the weather before being set out, planted in rich ground and kept well watered, they do love the sunshine.

WM. FALCONER.

THE MONTHLY PELARGONIUMS.

When I read about the new monthly Pelargoniums in some of last spring's catalogues, I wondered whether it was worth while to try them or not. I have been so "taken in," many times, by novelties and "desirable new plants" that I was rather skeptical in this instance. But the idea of a Pelargonium flowering the year round was so attractive that I sent for four plants, two Fred Heinl, and two Robert Heinl.

They were small affairs when they came, but they began to grow at once, and by the end of summer were fine, bushy plants. In foliage and general habit of growth they are very much like other Pelargoniums, and as they showed no inclination to bloom for some months after I procured them, I began to think the "monthly" part a clever dodge on the part of the florists to sell the ordinary varieties of the Pelargonium.

But along in September, when none of the Pelargoniums would think of flowering, I noticed a cluster of buds on one plant, and was glad to know that the "greatest acquisition to the window-garden for the last ten years," as one catalogue modestly put it, was not going to disappoint me by refusing to blossom, as I had feared, out of the usual season of Pelargonium flowering. There were fine, large buds in the cluster and many more small ones, and I saw another cluster coming as the first developed, and I began to think that perhaps I might have a succession of bloom from these new plants. I watched the development of the flowers as anxiously as flower-lovers watch the blooming of the Night-Blooming Cereus.

The first flower was as large as the average Pelargonium. It was white with a rosy blotch on each petal, that on the two upper ones being rather larger and darker than those on the other three. These petals are not like those of the Pelargonium, which differ somewhat in size and shape, but were all about alike, thus giving a round flower. It fully answered my expectations. I had not expected a flower as brilliant or showy as our Butterfly Pelargoniums. To look for *such* flowers, monthly, was to ask too much. When the fine, large buds had opened the effect was quite like a cluster of some of the small white and pink Azaleas. The flowers are durable, and by the time the first cluster had faded, the second one was ready to take its place. Buds appeared on the other branches, and soon the plant was covered with flowers. A small specimen had nine clusters on it, at one time. From that one may see what the possibilities are, with this new plant. And my plants have kept on flowering steadily. New branches have kept pushing out, until each plant is well covered with growing and blooming points. They are vigorous growers, more bushy and compact than the old varieties of Pelargonium, and more tractable, I think.

Robert Heinl has larger blotches of color than Fred Heinl, and the petals are sometimes suffused with pink. The effect of the flowers is very pleasing. They have a modest appearance, and yet are quite showy. I am confident that in them we have forerunners of a new class from which we may expect great things by and by. That they are free-flowering I know from my experience with them. If we can only get varieties with the gorgeous colors of the old Pelargonium, what a blaze of beauty we can have in our windows!

EBEN E. REXFORD.

THE CAMELLIA.

Fashion, which for some years past had refused to recognize this queenly flower in genteel society, is now taking the strange freak of reinstating it to its former glory. Already choice displays are seen at our exhibitions and in florists' windows; and several inquiries about their culture clearly indicate the revival of the Camellia; the following directions given by E. S. Rand, Jr., will therefore, no doubt, be of interest to many of our readers.

The Camellia should be grown in light loam, or sandy peat and loam, say three parts loam, two parts leaf mould, one

part sandy peat. Fill the pots one-third full of potsherds, to secure drainage, which is indispensable. If the roots of the plant become sodden, particularly during the season of rest, the health of the plant is gone, and years of care may fail to restore its beauty, or remedy the evil caused by a little carelessness in watering. When in a growing state, you can hardly give too much water, and much good may be derived from frequent sprinklings and syringings; this operation, however, must never be performed in sunny weather.

One chief care in the culture of Camellias is to keep them perfectly clean; dust upon the foliage not only injures the beauty of the plant, but affects its health. The plants are injured by too much heat. Some hold that no artificial heat should be afforded unless necessary to keep off the frost, but as we wish our Camellias to bloom at a season when there is but little else to ornament the greenhouse, it is advisable to force them moderately.

A safe rule is never to allow the temperature to fall below 40° at night, or rise above 65° or 70° during the day. The plant will thus expand the flowers more slowly and naturally, and there will be no complaint of dropping buds, imperfect flowers, and yellow, sickly foliage. One prime mistake in floriculture is the little attention paid to uniformity of temperature. A plant can no more preserve a healthy state when exposed to an atmosphere varying from 30° to 100° in a few hours, now dry and now surcharged with moisture, than can an animal. The progress of disease may be more gradual but it is sure to show itself, and, sooner or later, the death of the plant is the result.

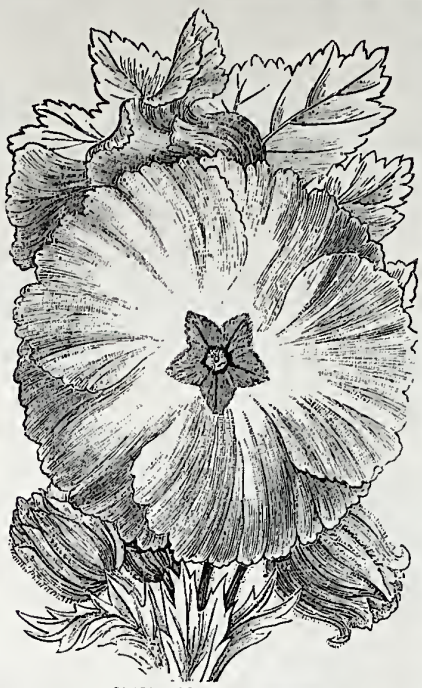
The plants, when in bloom, should be shaded, as thus the flowers remain in perfection much longer. Give the plants plenty of air at all times, but during the season of growth protect them from chilling draughts, which would cause the young leaves to curl and stunt the plant. During summer the plants should be placed in a shady, airy situation, out of doors; allow room enough between the plants for free circulation of air. The practice of setting the plants in a mass, under trees, is most objectionable; in the first place the drip from the branches over head is injurious; and again, the pots become filled with earthworms, which are often difficult to dislodge from their quarters.

Another mistake in the culture of Camellias is too frequent repotting. While the plant should not be allowed to become pot-bound, too much room should not be afforded. A vigorous plant will not require re-potting oftener than every three years; but on this point there is a difference of opinion.

It is a popular error that the wood of a Camellia should not be cut, while, on the contrary, there is scarcely a hard-wooded plant that bears the knife better. The plant is by nature symmetrical in growth, and, by indicious pruning, perfect specimens may easily be obtained. Pruning should be done after blooming, just as growth begins.

CHINESE PRIMROSES.

A more satisfactory flower for window as well as greenhouse culture does not exist. It is easily grown and almost always in bloom, the blooming season being most abundant during winter, when it is difficult to get large quantities of flowers on window plants, but in sunshine or shade the



SINGLE PRIMULA SINENSIS.

flowers of this plant are produced, and that during the most dismal part of the year.

The great improvement of late made in Primroses, gives us flowers of large size, some fringed, some plain, some double like a Rose, some only semi-double, but all beautiful, and varying in colors from the purest

DOUBLE PRIMULA SINENSIS.

white to the brightest scarlet. In addition to this the diversity and beauty of its foliage makes the plant attractive even when out of bloom. We have four-leaved varieties with leaves deeply and gracefully serrated, giving them a feathery and pleasing appearance; others have the foliage beautifully colored on the reverse side, producing a pleasant contrast with the lively green of the surface.

Single Primroses are generally raised every year from seed, still they can be preserved in good condition for years, blooming more or less all the time. Young plants, however, give the most satisfactory results, and if raised during May or June, will commence flowering early in the fall and continue during the winter and spring months.

Seeds should be sown in shallow boxes, in soil composed of leaf mould and loam in equal parts, with a good mixture of sand to insure free passage of the water. Cover the seeds but lightly; place a pane of glass or paper over the box to maintain a steady moisture. As soon as the seeds germinate and begin to grow, gradually raise the glass to harden the seedlings to the light. When the plants show their first characteristic leaves, either pot singly into thumb pots or, what is better, prick them in around the edge of four or five inch pots, in which they grow more rapidly. The reason for this is obvious. The plants have the benefit of a more uniform degree of moisture than when in small pots which dry out quickly. When they have formed strong, bushy plants around the pots, shift singly into two-and-a-half inch pots, and keep shaded until they start to grow. Always place the plants deep enough in the soil to cover any bare stems which are apt to form, when grown in a high temperature, and far from the glass. As the plants grow, shift regularly until a size of six or seven inch pots is attained, in which they are to remain while in bloom. Place good drainage in all pots of six inches and over.

The most suitable soil for Primroses is a compost of well-rotted leaf mould, thoroughly decomposed manure, run through a quarter-inch sieve, so as to remove all small pieces of wood and reduce it to proper fineness. Use equal parts of the leaf mould, manure and friable loam, mix thoroughly and add sufficient sand to insure porosity.

Considering the large demand for Primula seed throughout the United States and Canada, I have often wondered that some of our enterprising florists have not made a specialty of raising seeds and still more improving the already beautiful strains. As it is, we have to send to Europe for our Primula seed, when it may be just as easily grown at home. So many seeds that formerly had to be imported are now raised here that it is to be hoped the day will not be far distant when we shall raise our own Primula seed.

MANSFIELD MILTON.

OUR WINDOW BOX.

Healthy, vigorous growing plants can hardly be watered too much at this season, provided the pots are well drained. Such plants take up and evaporate water with great rapidity.

When planting pot-plants in the open ground and the ball of earth is matted with roots, the ball should always be broken by slightly bruising it between the hands before placing it in the ground, to lessen the resistance.

Lawn and Landscape.

THE VIEW OUTWARD.

Lawns are laid out and trees planted with the idea of making the grounds as beautiful and attractive as possible to the passer-by. This is so invariably the custom that I will let the few exceptional cases speak for themselves. The old adage of "Home first, and the world afterwards," is quite reversed in this prevailing custom. Perhaps it is natural for us to do this, just as it is to put on our best behavior and our best clothes for the critical eyes of the public; but to truly refined and thinking people there is something distasteful in this practice of sacrificing the beauty and pleasurableness of the home, for the sake of furnishing a pleasing prospect for the outside world.

How many beautiful bits of scenery are shut out from the view of the inmates of homes, by attempting to surround the houses with imposing arrays of trees and shrubs, for the public to admire!

"What an easy, retired place, all shut away from the outside world;" says an enthusiastic, but unthinking person when going by such a place. Seclusion and shade may be desirable at times but too much of either is bad for the human family. Neither mind nor body can long flourish with such surroundings. It rests and refreshes the mind to let the eye reach out over miles of varied landscape, and view it in sunshine and shadow, as well as through the varying aspects of the seasons.

I doubt that I could find it in my heart to cut down noble old trees that had withstood the blasts of generations; but I am quite positive that I could easily bring myself to trim them out, and let in the sunlight and a view of the outer world.

There is some excuse for allowing thrifty trees of a natural growth to remain, even in inconvenient and undesirable places; but the designer and maker of a lawn may easily avoid these objectionable features, in planning his improvements. In planting his trees and shrubs he should carefully consider the size of their ultimate growth as well as their location. If there be an unsightly prospect in any direction it should be shut out of the range of vision, so far as practicable, by a growth of trees and shrubs. And the pleasing bits of landscape should be as scrupulously preserved; for no work of art can replace them with satisfactory equivalents. Men will pay hundreds and thousands of dollars for a, perhaps, faulty painting, while they ruthlessly sacrifice the inimitable original.

Yes, we must learn to arrange our lawns and grounds for our own satisfaction, and not altogether to please the public. In doing so we shall lead the public taste into more commonsense channels, perhaps. We must teach people to look at these things from *our* standpoint, instead of going over to theirs, as did the gentleman whose grounds I visited last summer. "Just come down this way," said he enthusiastically; "this is the finest view, and the point that I studied the effect from." It is needless to say that he led the way out into the street. The custom of the times makes these things so common that we seldom remark upon them; yet I, for one, think it time to enter a protest against the cringing, eatering spirit manifested by men who are generally cultured and intelligent. Such a spirit causes men to be inconsiderate of the home rights of their own families. In the arrangement of the home and its surroundings, let it indeed be, "Home first, and the world afterwards."

W. D. BOYNTON.

NATIVE FLOWERING SHRUBS.

Comparatively few persons are aware of the beauty of some of our native shrubs, which if they were met with in well kept lawns and shrubberies could not fail to be admired. The following is but a partial list of those that do well under cultivation.

Cercis Canadensis. Red-Bud, Judas Tree. For very early flowering, this shrub excels all our natives. The flowers are violet-purple and borne in great abundance before the leaves start. The effect is striking. The round leaves are odd and attractive. It is hardy at Boston.

Clethra alnifolia, White Alder, deserves a place in every garden on account of its delicious fragrance.

Kalmia latifolia, Mountain Laurel. An evergreen shrub which is very showy with rose-colored flowers in spring. For winter grouping this plant is always desirable.

Leiophyllum buxifolium, Sand Myrtle. Does well in the open sun on dry ground and is very ornamental.

Hypericum prolificum, Shrubby St. John's Wort. This is one of the very best of hardy undershrubs, and it is very easy of cultivation. It is a profuse bloomer.

Dirca palustris, Leatherwood. The neat and clean habits of this bush recommend it rather than the flowers. It thrives well in an ordinary dry soil.

Amorpha fruticosa, False Indigo Plant. A very attractive shrub, bearing its purple flowers much after the manner of some of the garden Spiræas.

Andromeda floribunda gives a great profusion of pretty, heath-like flowers in early spring. When given shade the plant does well in an ordinary soil.

Euonymus atropurpureus, Burning-Bush. I have seen this in cultivation once or twice and it appeared to possess all the good qualities of the common European species.

Staphylea trifolia, Bladder-nut. This bush does well on ordinary dry ground. Its drooping clusters of bell-shaped flowers in early spring and the odd, inflated fruit in autumn entitle it to a place in the shrubbery.

Rhus copallina and *R. glabra*, Sumachs, give deep red foliage in autumn.

Hamamelis Virginica, Witch Hazel. I know of no native plant which blossoms at such an untimely season as this. After the leaves have all fallen in the autumn the curious yellow flowers make a display.

Ilex verticillata, Winterberry. The best of our shrubs for ornamental winter fruit. It does well on ordinary dry soils.

Cornus, Dogwood. Most of the species of Cornus are very desirable shrubs, especially *C. florida* on account of its great showy involucres, and *C. stolonifera* on account of its red stems and abundant flowers. This latter species, although growing naturally in swamps, thrives well in dry grounds. I think it is as good as the much praised European species *C. sanguinea*.

Symphoricarpus racemosus, Snowberry, is known and appreciated by all.

Of the *Loniceras* or Honeysuckles, *L. Sullivantii* (*L. flava*) is the best I have seen in cultivation, except, of course, the old favorite Trumpet Honeysuckle, *L. sempervirens*.

Sambucus Canadensis, or rather *S. racemosus*, Common Elder, is deserving of a place in any grounds. When properly trained it is certainly a very beautiful shrub. It seems a pity that this shrub is naturally so common and hence little prized.

Salix, Willows, are often highly ornamental, especially the staminate plants which give golden yellow "pussies" in advance of the leaves. *S. discolor* is the most desirable. *S. lucida* is to be recommended for its very bright foliage.

L. H. BAILEY, JR.

PLANTING ORNAMENTAL TREES.

The Western N. Y. Horticultural Society's committee on ornamental trees and shrubs makes these excellent recommendations:

In planting out trees and shrubs it is desirable to give each specimen abundant room so the sunlight can reach the entire plant or tree. Do not plant beautiful shrubs in the shade of large trees, not wholly because the roots of the larger will exhaust the smaller, but because the effect of the larger over the smaller is to destroy the foliage, which is followed by the sloughing off of branches, very often destroying one side of the plant, or better still, killing it outright.

To grow *perfect* specimens should be the aim of every planter, and to accomplish this it is essential to give plenty of room to each specimen. *Do not plant too closely*, would be the caution we recommend. Too close planting is the cause of so many poorly furnished trees and shrubs. Wherever you find a beautiful, symmetrical, fully foliaged tree or plant you will notice it is an isolated specimen situated where it has room naturally to develop itself with entire freedom. If you can have but one good perfect specimen, do not crowd two or more into the space.

TAKING UP FOREST TREES.

To take up a young forest tree, says a correspondent of the N. Y. Tribune, first wind a wet sack around the stem, close to the ground, so tightly that it cannot slip; then take a timber-hitch with a small cable-chain, cut off a few roots on the side opposite the steady team, and you will get nearly every root whole, and plenty of soil. I took up 100 Rock Maples in this way last spring, after I had learned to wind the sack properly, without damage to the trees. In this way two men with a team will take up more trees in an hour than they could without a team in half a day.

BEST EVERGREENS FOR THE LAWN.

Mr. E. S. Carman, editor of the Rural New Yorker, whose collections of ornamental trees are very large and choice, says that if he were asked what three evergreens he would recommend above all others for the lawn, he would name first, The Blue Spruce, *Abies*, or, according to the new nomenclature, *Picea pungens*; second, the Oriental Spruce, *Abies orientalis*, and, third, Alcock's Spruce, *Abies Alcockiana*. These are extremely hardy, and very distinct and desirable in every way.

Foreign Gardening.

PALMS AT HOME.

THE ASSAI PALM.

Euterpe edulis. This excels all other Amazonian Palms in graceful beauty. It is found plentifully around Para, Brazil, and is probably the Palm which first attracts the attention of the newly arrived traveller. The trunk of the largest seldom exceeds a few inches in diameter, but it waves its crown of light-green drooping fronds fifty feet in the air.

This Palm usually grows in groups of three to five, the trunks springing from the same root. It is a beautiful sight to see these trees when struck by a strong wind. They will bow almost to the ground, but they never break and are very seldom uprooted. They are generally found in the gardens of the city, and grow in untold numbers upon the islands of the coast, becoming less numerous as one ascends the river.

The flowers are in feathery spikes which spring from the trunk a little below the crown of leaves; they are succeeded by the fruit, which when ripe is black with a glaucous bloom and about the size of a Concord Grape. It consists of a hard seed enveloped in a very thin pulp covered by a thin, hard shell. In the delta of the Amazon this fruit ripens all the year round, but upon the river it is only in season for a few months in the spring. One can imagine in what abundance this Palm grows when he knows that the chief food of the lower classes in Para is the drink made from the fruit, which is eaten with farinha made from the Mandioca root.

This drink is prepared from the ripe fruit by slightly changing it to crack the shell, and then washing off in water, one thin pulp surrounding the seed. This pulp is not much thicker than a sheet of paper. The liquid is then passed through a fine Palm sieve, cold water is added to bring it to a proper consistency, and it is ready for use. In color and taste it much resembles stewed Blackberries; it is called wine of Assai, for in Brazil any infusion of fruit in water is called wine, the word not necessarily implying a fermented liquor. This drink is very nourishing and very palatable if a little sugar is added; it is also very healthful.

One walking in the streets of Para in the lower quarters, sees this drink in preparation at times in almost every house. It is sold at the street-corners, and is carried round by negresses who bear on their heads huge earthen bowls full, or broad, flat trays covered with cups or bowls of assai, while the air rings with the shrill cry, "Assai, Assai." The native buys and drinks it with relish, but the foreigner, if he has witnessed the preparation of the drink in the dirty sheds and hovels of the city with all the filthy surroundings, prefers not to taste "assai" unless he knows the woman by whom it was compounded.

The fruit of this Palm germinates readily; indeed, outside of the houses where the drink is prepared it is no uncommon sight to see the young plants coming up as thick as Oats, and at present writing, in our own back-yard, where the seed has been thrown, we could fill an order of many thousand plants. The tree is of rapid growth, fruiting in five years from seed. In the greenhouse it is very ornamental, and young plants make an attractive centre ornament for the dinner-table.

THE "BACABA" PALM.

Oenocarpus Bacaba. Quite different in character is the *Bacaba*, which is also common around Para. The tree is about forty feet in height, with thick, straight trunk, which is crowned by semi-drooping long dark-green fronds arranged opposite, which give the tree a rather stiff appearance. It is, however, a stately tree, and when full of the long, drooping spikes of fruit which hang from among the lower leaves is very ornamental. The fruit is about the size of that of the Assai but is of a rusty-brown color.

A drink is prepared from it in a similar manner, which in color resembles rich chocolate and cream, and which in taste reminds one of stewed Gooseberries. To our taste it is far better than the assai, but it is said not to be as wholesome and that a frequent indulgence renders one liable to chills and fever. We have, however, drank it more freely than the assai without any ill effects.

The young plants of the *Bacaba* are very beautiful, the fronds very richly colored, varying from deep-maroon to purplish-green. This Palm is seldom found in catalogues but would well repay cultivation, which is very easy, as the seed is readily procured and germinates without difficulty.

E. S. Rand.

VEGETABLE CULTURE IN BERMUDA.

Consul Allen says that Onions, Potatoes, and Tomatoes comprise almost the entire production of Bermuda, and give employment to the greater portion of the inhabitants, and the prosperity of the colony depends largely upon the success of the crop and the demands of the markets.

ONIONS.

In Onion-growing the seed used is grown in the Canary Islands, and is imported in the months of August and September; it is sown in the months of September, October, and November, thickly in beds, the ground having been heavily manured with stable manure two or three months before sowing. The white seed is sown first, and produces the earliest crop, the shipment of which commences in March. When the plants are sufficiently large—about six to eight inches high—they are transplanted into beds about four feet wide, the plants being set about seven inches apart each way. The plants from the white seed are transplanted as soon as they are large enough, but those from the red seed are not usually transplanted until the beginning of January, and the ground requires to be only moderately manured. If transplanted too early, and the soil is too rich, the bulb is likely to split into several pieces, and is worthless. After transplanting, the soil requires to be lightened once or twice, and the weeds removed before they mature. As soon as the top begins to fall, the Onions are pulled and allowed to lie on the ground for two or three days, when they are cut and packed in boxes of fifty pounds each and sent to market.

All the Onions are delivered at the port of shipment in boxes, ready for the market, and for the past two years the producer has been compelled by law to place his name or initials conspicuously on each package. It is estimated that a large profit on the outlay is realized, when the crop is large and the market good, an acre of ground sometimes returning as much as £120 to £170.

POTATOES.

For the cultivation of Potatoes the seed was formerly nearly all imported from the United States, but of late years has come largely from New Brunswick, Nova Scotia, and Prince Edward's Island. The ground for Potatoes is usually plowed or broken up with the spade and raked, the seed cut into pieces with one or two eyes, and planted by forcing into the ground with the fingers to the depth of about four inches, in rows about twenty inches apart, and about eight inches in the rows. From six to eight barrels of seed are used to the acre. When the plants are a little above the ground, the soil is lightened between the rows with a fork, and when about six inches high the earth from between the rows is hoed round the plants, only one hoeing being required.

TOMATOES.

For growing Tomatoes the seed is imported every year, and is sown about October, and transplanted in December, into rows about six feet apart, and the plants are put about four feet apart in the rows. As soon as transplanted, the ground round the plants is covered thickly with brush,—chiefly the wild Sage which grows over the hills,—not only to protect from the wind, but to keep the fruit from the ground. The brush is usually raised once by running a stick under and lifting it enough to clear the soil of weeds, no other cultivation being required. Six or seven quarts of fruit from the hill is considered a fair crop. The fruit is rolled in paper, and packed in boxes containing about seven quarts each. The price of land in Bermuda varies from £30 to £40 an acre, and in some cases not more than one-eighth is susceptible of cultivation. It is estimated that there is an annual export of 350,000 boxes of Onions, the box containing about fifty pounds, and of Potatoes, 45,000 barrels.—*Scientific American.*

DWARFING TREES.

The Gartenflora gives the following interesting account of the method by which the Chinese produce miniature trees, and which could easily be tried without trouble or expense: The pulp of an Orange is removed by an aperture the size of a half dollar, and filled with Cocoanut fibre, tow, and powdered charcoal. In the center is placed a seed of the tree it is wished to grow. The Orange is placed in a glass or other vessel, and the compost kept moist. The seedling germinates, the stem protrudes through the hole in the Orange, the roots penetrate the rind. The roots as soon as they reach this stage are cut off close to the rind, and this is continued for two or three years. The tree ceases to grow, and assumes the aspect of an old tree. The roots equally cease to grow, and the rind of the Orange is painted and varnished.

The Japanese have a way of dwarfing and growing forest trees in comparatively very small pots. Visitors at the centennial exhibition in Philadelphia will recollect the odd-looking specimens brought from Japan, which were said to be over a hundred years old.

Exhibitions & Societies.

NEW YORK HORTICULTURAL SOCIETY.

The superb display of Orchids at the Spring Exhibition of this society, held March 3d, showed plainly in what high favor these now so fashionable flowers are held. Never in the history of the society were such quantities and such perfect specimens of Orchids shown.

The lavish display of Orchids by Thomas Emerson, gardener to Mr. Wm. B. Dinsmore, of Staatsburg-on-the-Hudson, formed the center of attraction. Of some kinds a dozen or two blooming spikes were shown in one huge bunch, and if one has the material to do it with, this is certainly the most effective way to exhibit flowers. Among the best in the collection were *Oncidium alatum*, *O. luridum*, *Cœlogyne cristata*, *Phajus Wallachii*, *Lælia anceps*, *Phalænopsis Schilleriana*, *P. Stuartiana*, *Dendrobium amabile*, *D. macrophyllum*, *D. nobile*, and *Odontoglossum Rossii*.

Wm. H. Clements, gardener to Mrs. Chas. Morgan, who never shows anything inferior, excelled himself in the excellence and beauty of his Orchids, the most striking of which were *Saccolabium giganteum*, *Cattleya Trianæ*, *C. nobilior*, *Lælia harpophylla*, *L. flava*, *Phalænopsis amabilis*, *P. Schilleriana*, *P. leucorhoda*, *Sophronites grandiflora*, *Odontoglossum Jenningsii*, *O. Alexandræ*, *O. cirrhosum*, *O. Rossi majus*, *Cœlogyne cristata*, *Dendrobium glumaceum*, *Epidendrum Wallisii*, *Cypripedium Harrisianum*. Three or four other exhibits, the owners of which we could not ascertain, contained very fine specimens of these curious plants.

In addition to a magnificent display of the leading varieties of Roses were several of the newer kinds. The "Bennett" Rose improves considerably by nearer acquaintance; it is certainly a most beautiful Rose. "American Beauty," shown for the first time by Geo. Field & Bros., Washington, D. C., is a grand Rose of large size and exquisite fragrance. Reine Marie Henriette, a variety not frequently seen, is a charming Rose, cherry-red, large and very double.

Hallock & Thorpe made a grand exhibit of Hyacinths, Tulips, Crocus and other spring-flowering bulbs, also Carnations, Geraniums, etc.

Albert Benz showed his new Carnation, "Douglaston," in greater perfection even than at the last meeting, also his new Calendula, and remarkably beautiful Pansies, and Lilies of the Valley.

Siebrecht & Wadley exhibited a large collection of miscellaneous plants, especially notable among which were *Anthurium Scherzerianum*, *A. Farriensi*, and *A. Andreanum*.

The new Carnation "Scarlet Gem," exhibited by Craig Bros., attracted much attention. It has a peculiar, very decided scarlet, and perfect shape.

Some 50 varieties of Camellias were shown, the first in many years. Cinerarias, Begonias, Violets, Azaleas, Abutilons, Amaryllis, Pansies and endless varieties of other plants added to the attractions of the exhibition, which was declared by many visitors and exhibitors to be the best one held by the society in many months.

APRIL MEETING.

Coming so shortly after Easter with its heavy drain on flowers of various kinds, the April Exhibition could hardly be expected to be as large as the previous one. Nevertheless three broad tables running through the entire length of the hall were densely covered with beautiful flowers and plants.

A magnificent specimen of *Clerodendron Balfourii* occupied the place of honor at the head of the center table. The plant was trained on a cylindrical wire frame about six feet high and three feet in diameter, and was completely covered with its charming white and scarlet flowers; exhibited by Martin Lipps, gardener to Mrs. C. Spofford.

A collection of Orchids which had arrived from England the same day attracted much attention. The specimens were in full bloom, and in much better condition than one should suppose it possible they could be after so long a sea voyage. It comprised *Odontoglossum gloriosum*, *O. Alexandræ*, *O. cirrhosum*, *O. Andersonianum*, *O. Rossi majus*, *O. Pescatorei*, *O. Sanderianum*, *Masdevallia amabilis*, *M. Harryana*, *M. Shuttleworthi*, *Dendrobium nobile*, *Oncidium saccolabium*.

The prize for the best new plant was awarded to Wm. Clement, gardener to Mrs. M. J. Morgan, for *Athurium Rothschildianum*. The Orchids from the same exhibitor formed, as usual, one of the principal attractions.

Of Roses the display was really superb. In a large bunch of Paul Neron, none of the flowers were less than five inches in diameter, and a bunch of Magna Charta contained even larger flowers.

Azaleas were shown in great numbers and made a gorgeous display.

R. B. Parsons exhibited a large collection of Camellias.

A collection of Cinerarias of rare excellence was shown by John Farrell, gardener to Wm. Barr.

Chas. Bird, Arlington, N. J., exhibited a bunch of Mignonette, the spikes of which were, we think, the largest we have seen.

The collection of cut flowers were unusually choice, especially the exhibit of Geo. Lucas, gardener to S. L. M. Barlow, containing many Orchids, Nymphæas, etc.

In the miscellaneous department many well-grown and beautiful specimens were notable, Lilies, Hydrangeas, Ericas, Begonias, Ixias, Violets, Pansies, Carnations, Geraniums, Tulips, Hyacinths, etc.

Among the vegetables, an immense Cauliflower from Palatka, Florida, attracted most attention.

SOCIETY OF AMERICAN FLORISTS.

At a preliminary meeting held recently in Pittsburg, it was decided to hold the first general meeting of the society at Cincinnati next August. The programme contemplates an exhibition of plants, both old varieties and new, of cut flowers, of florists' supplies and heating apparatus, green-house structures and appliances, besides an exhibition of any and all inventions connected with the florists' trade.

Each day there will be three sessions, at which one or more original and practical papers will be read and discussed. The coöperation of the most prominent and skillful florists of the country has already been promised, so that the success of the meeting as well as the society is fully assured.

AMERICAN INSTITUTE FARMERS' CLUB.

FLOWER-BEDS FOR COUNTRY HOMES.

The following excellent paper was read at the second March meeting by Peter B. Mead, chairman of the committee on agriculture.

I have occasion to pass over a considerable extent of country in the course of a year, and am always surprised to see so little attempted in the way of ornamentation in the door-yards of farmers' homes. This is true, also, but in a less degree, of village homes. I could, indeed, name a number of villages which are noteworthy for the neatness and good taste to be seen in nearly all the door-yards on the principal streets; but where one such is to be seen there should be a hundred. Such villages are not very uncommon in New England, Pennsylvania, and parts of the West. They are usually regarded as evidences of thrift and success. While this, in many cases, is doubtless true, they are, to my mind, evidences of a good deal more; that some people, irrespective of wealth, have learned to know that "life is worth living."

It is a great pleasure to me to be able to say so much for many village homes. I wish I could truthfully say as much for our farmers' homes. While here and there, like oases in a desert, a pleasant green spot with a few flowers meets the eye, it forms the exception, and not the rule. Why is this so? I have tried to learn the cause, and found one of three reasons generally given by my farmer friends. One says, "Oh, I haven't got the time to bother with these things." Another says, "It costs too much. I'm too poor." Still another says, "Well, I don't know. Our folks don't seem to care much for them." On asking the wife, however, I almost always find that she cares a good deal for them, even in cases where the life of the wife is reduced to drudgery by the care of children and providing for many farm hands, without help in the kitchen.

Let us look at these reasons: There are few farmers who cannot occasionally spare half an hour for improving and ornamenting their door-yards, thus enhancing the value of their property, besides making home more attractive to all. This occasional half hour is all that is needed on the part of the man. The woman will do the rest.

Next, let us look at the cost. This is a great "bugbear" which can easily be put to flight. The bed once made in the manner and form presently to be explained, it can, if a man be so very poor, be filled with beautiful flowers at a cash outlay of 10 cents, and in some cases at half that sum.

Lastly, we have the poor man who tries to deceive himself with the excuse that "his folks don't seem to care much for flower-beds." This man, be it remembered, has a wife and children, and it is possible that he cares so little for them that he really does not know what they care for. He probably never asks. Go to this hard-worked and much traduced woman, and simply ask her how she would like to have a few flowers about the house. Instantly the hard and careworn look leaves her face, her eyes brighten, and for the moment she seems a transformed being. Whoever else may not care for the flower-beds, it is not the women or the children. How easy it seems for some men to forget that they ever had a mother.

Let us be thankful that there are not more of such thinkless creatures.

In making beds you will need only about 20 feet of strong twine, a tape line or ten-foot pole, and three hard-wood stakes about 15 inches long, half an inch in diameter, and pointed at one end. A good substitute for the wooden stakes is half-inch wire pointed at one end, and which any blacksmith can furnish. One of these stakes is to be used as a scratching-pin, and the others for holding the string at the points of radius while the outline of the bed is being marked.

If the bed is to be made in the sod, the grass should first be cut short, in order that the mark of the scratching-pin may be plainly seen. The outline may be easily and neatly cut by any old table-knife ground to an edge. After the edge is cut, spread two or three inches of well-rotted manure over the bed, and dig it under. The soil should be made moderately rich and mellow to the depth of at least a foot. If the bed is to be made on the naked ground, first spread the manure and dig it under. Then put in the stakes, mark the outline, and lay the sod so that it laps over the mark about an inch, so that a clean edge may be cut. Beat the sod down firmly with the back of the spade, scratch the outline again, and cut the edge.

The middle of the bed should not be raised more than two or three inches above the edge or border. Nothing, to me, is more unsightly than a flower-bed raised a foot or more in the center. It is not only in bad taste, but it is bad for the plants. Rake the surface off clean and fine, and the bed is ready for planting. The size of the bed should be made to correspond with the size of the place, bearing in mind that a small or moderate-sized bed looks better than a very large one under all circumstances. In a country door-yard I would prefer two small beds to one large one. They can be made more effective, and afford an opportunity for a greater display of color.

Having made the bed, the question naturally arises, What shall we put in it? Keeping in view the object with which I set out, I will name only such plants as can be easily obtained and easily grown. I will first give a list of what are called "bedding plants," which the villager and the farmer can buy cheaper than he can raise. Among the best of these for our present purpose are the Scarlet Pelargonium or Geranium, *Coleus Verschaffeltii*, Petunia, Achyranthes, Salvia, Ageratum, Verbena, Fuchsia, and Canna, the last with a groundwork of Sweet Alyssum, Mignonette, and *Lobelia erinus*. There are others, but these are good and easy to grow. They may be set from 10 to 15 inches apart, except the Fuchsias and Cannas, which should be at least two feet. These plants will cost from $1.50 to $2.50 a dozen, and late in the season somewhat less.

I have said that a bed could be filled with beautiful flowers, at a cash outlay not to exceed 10 cents. It so happens that the list of annuals presents us with some of the most charming bedding plants we have, though they are seldom used for this purpose. I will name a list that flower freely, and that can be raised without the aid of a hot-bed. The seeds of all of them can be bought for five or ten cents a packet, and a packet will furnish plants enough for a large bed. I have used them all, and know just what they will do. You can buy them in mixed colors, or each color distinct. For the beginner I would name *Phlox Drummondii*, Pelunia, Double Zinnia, Dwarf Nasturtium, *Convolvulus minor*, *Dianthus Chinensis*, Nemophila, Schizanthus, Eschscholtzia, Godetia, *Salvia splendens*, *Thunbergia alata*, and for a late bed, Portulaca. I could name others, but the list is long enough to select from. *Thunbergia alata* and its varieties are running or climbing plants, but they are beautiful bedding plants notwithstanding. When the runners reach the edge of the bed, you have only to turn them towards the middle to keep the bed in good form. *Dianthus Chinensis* is called biennial; but it flowers the first year, and a bed of it will last several years in good condition. It is a beautiful, free-blooming plant, and a great favorite among those who know it. *Heddewigii* is one of its best forms. I may suggest that only one kind of plant should be put in the same bed; but the kinds of plants may be changed from year to year to suit one's taste.

The seeds should be sown early in some dry, sunny spot and transplanted when an inch or so high, selecting a cloudy day for the purpose, if possible. Otherwise, water the plants freely. Sow the seeds thinly in drills, and press the earth upon them. Cut the weeds down as soon as they are big enough to be seen, is a good rule for universal application. It is so easy to do it at this time, but so hard when they get to be large.

It is the duty, as it ought to be the pleasure, of every man who owns a home, not only to improve it, but to make it beautiful and attractive to his family, and especially to his children. Every child, at least, ought to feel that there is no place like home. Let the farmer remember how the wife toils day after day to help him make the farm pay, and what a tender, soothing, and sympathetic being she is in the sick-room, and then let him resolve that henceforth he will help her to make home both beautiful and happy. Let me hope that I have said something that will be helpful to him in carrying this resolution into effect, knowing, as I do, that he will find it a pleasure, and not a toil, to surround his home with these silent-speaking but eloquent children of Nature, whose sweet breath and beautiful array are a perpetual delight, not only to those at home, but to all who pass by on the way.

A GRAND STRAWBERRY EXHIBITION.

It is proposed to hold the coming June in New York a Strawberry Exhibition, under the auspices of the American Institute Farmers' Club. The rapid progress in Strawberry Culture, and the many new varieties introduced within the past few years, make such an exhibition especially desirable. It will continue two days, and during its progress meetings will be held for the discussion of the merits of the various varieties on exhibition, and on Strawberry culture in general. It is expected that all the extensive Strawberry growers within convenient reach of New York will exhibit, and coöperate with the undertaking, so as to make the exhibition as well as the meetings the largest and most interesting ever held in the city. It is yet too soon to decide upon the most suitable date, but as soon as the arrangements have been completed, circulars and prize lists will be issued and mailed to anyone desirous to receive them who will address the secretary, D. R. Garden, American Institute, New York.

THE CHAUTAUQUA TOWN AND COUNTRY CLUB.

The grand success of the Chautauqua Literary and Scientific Circle with its 56,000 pupils, constituting the largest school in the world, has suggested the idea of organizing a branch society for agricultural and horticultural education. Modern educational systems, those of the Kindergartens, especially, are rapidly superseding the old routines. Colleges and high schools, excellent as many are in their special fields, are sadly inefficient in reaching and educating the hundreds of thousands who, while obliged to stay at home, long for knowledge and self-improvement. To all these this institution extends the hand of welcome, and is prepared to furnish all the educational facilities that circumstances permit, and that are best adapted to the ability, energy and diligence of each pupil. And all this without any expense whatever except the nominal membership due of 25 cents.

The main objects of the C. T. C. C. are: First, to help its members to learn something about the earth on which we live, its plants, flowers, and fruits, and to make the acquaintance of the plants and animals on the farm and in the house; secondly, to help its members to become trained, skillful, and accomplished; and, thirdly, to show them how to use their skill and knowledge in gaining health and happiness. Fourthly, to show its members how money is earned, to point out the way to many useful trades and arts, and to show them the value of good and honest work. Lastly, to show by the study of nature something of the Creator's wonderful ways in managing this beautiful world.

The home of the C. T. C. C., or head-quarters for work and information concerning all matters, excepting the entrance of new members, will be at Houghton Farm, Mountainville, Orange Co., New York. Houghton Farm is a large, first-class farm, devoted to all kinds of farm crops and garden work. Everything is carried on at the farm that can be found on any farm in the Northern States, including cattle raising, horses, pigs and sheep, orchards, greenhouses, poultry yards, kennels, and dairy, and fruit, flower, and vegetable gardens. There is, besides all these branches, a first-rate meteorological and experimental station. Each department is carried on to obtain the very best results possible.

Nowhere else could such admirable facilities be found as are here placed at the disposal of the Club, by the liberality of Mr. Lawson Valentine, the proprietor of Houghton Farm.

Although the C. T. C. C. is as yet scarcely well organized, its success is already fully assured, and the amount of good it may produce is simply incalculable.

Circulars explaining fully the details of the course of studies and conditions of membership—and we advise every boy and girl reader of THE AMERICAN GARDEN to become a member—may be had by addressing C. T. C. C., Houghton Farm, Orange Co., N. Y.

Miscellaneous.

GARDEN PEAS AT HOUGHTON FARM.

THE THREE YEARS' TRIAL.

Seasons:—1882; Fair but growing unfavorably dry towards maturity. 1883; exceptionally favorable. 1884; very favorable.

The Telegraph has thus led for three years in number of peas per pod, size and weight of peas and pods; but in pods per plant it is third, and therefore its productiveness for a given length of row is inferior to the Champion and the Imperial. Although in number of peas to the pod the Blue Imperial is least, it leads in number of pods to the plant, and for three years its average net product of edible peas to 10 feet in the row has been greater than the others; add the low growth of this variety and its very fine table quality, and it acquires a front rank in the list. The Blue Imperial is somewhat inclined to mildew, but seldom enough to hurt its fruit, while it withstands drouth better than almost any other variety. Planted at the same time, of the four varieties in this table, the Advancer is usually two weeks earlier in maturing than the others. The general average of the Champion is very high, and in quality it is equal to any.

NAMES OF THE VARIETIES TRIED THREE YEARS.	MATURITY. Planting to Picking. Days.			GROWTH. Length of Haulm. Inches.			RELATIVE PRODUCTIVENESS. Pods to the Plant.			Gross weight of given number of Pods.			Weight of Edible Peas to given number of Pods.			Peas per Pod.		
	1882	1883	1884	1882	1883	1884	1882	1883	1884	1882	1883	1884	1882	1883	1884	1882	1883	1884
Dwarf Blue Imperial .	59	69	70	36	37	37	1	1	1	4	3	3	3	4	3	4	4	4
McLean's Advancer .	54	70	53	58	50½	21	2	4	4	3	4	4	4	3	4	2	2	2
Culverwell's Telegraph	68	67	69	55	61	60	3	3	3	1	1	1	1	1	1	1	1	1
Champion of England	68	69	66	67	65½	66	4	2	2	2	2	2	2	2	2	3	3	3

THE TRIAL FOR 1884.

In the experiments last year, see below, for hight of haulm, instead of taking any number of vines consecutively in a row, ten single plants were selected for measurement, of average size and vigor. The same method of selection was pursued in counting the number of pods per plant; well-set blossoms were counted as pods. In obtaining pods for weighing and counting contents, those were taken as if picking for table use; very imperfect pods being rejected. The figures therefore fairly represent the average facts.

The season of 1884 was exceptionally favorable for Peas, and all varieties made a fine, healthy growth. All entered in the table had like exposure and treatment, and were grown on good garden soil. Seed was obtained from different localities and in some cases of different ages, to observe, in the same variety, the effect of these differences. The American Wonder, no matter where grown, was very true to type and even in yield: yet the Long Island seed gave best results in both plantings. Comparison of the two plantings, shows this variety should be grown early. The Blue Peter was rather more productive than the Wonder.

Sibley's "First and Best," Henderson's "First of All" and Carter's "First Crop," are so similar in every respect, that they are not entitled to distinct names. They were all earlier than the dwarfs above mentioned and more productive. In earliness, productiveness and quality, the Dan'l O'Rourke maintains its good reputation. The four lots of seed of the Advancer are shown by the table to have proved remarkably even in growth and product. The merits of the Blue Imperial are named in connection with the first table; its habit of producing pods in pairs is alone enough to account for its great prolificacy. Culverwell's Telegraph and Carter's Telephone are almost identical in appearance and product. The Champion of England needs no word of commendation,—but attention is called to the curious fact that, *in this instance*, the older the seed the better the result. The 1881 seed produced more pods per plant, and more and heavier peas per pod than fresher seed, and the 1882 lot gave better results than the average of the two of 1883. The same holds true in the case of the "First of All," where the 1882 seed did much better than that a year younger. The oddity of this list is the last mentioned in the table: a Pea bought as a dwarf grew to six feet, was 88 days in maturing, and produced over 70 pods to the plant, in pairs, but the peas small and light.

HENRY E. ALVORD, *Manager*.

TRIAL FOR 1884. NAME OF VARIETY.	Seedsmen and where grown.	Seed from Crop of	Date of Planting.	Date of Vegetation.	Date of first Picking.	Average height of haulm of 10 plants. ft	in	Pods generally single (S), in pairs (P).	Average No. of pods per plant. No.	Weight of 200 average pods. Oz.	Weight of Peas from 200 average pods. Oz.	Number of Peas in 200 average pods. No.
Blue Peter	Henderson & Co.	1883	May 13	May 24	July 7		22	S	4.7	47½	28	1024
American Wonder	Bliss, on Long Island.	1883	Apr 15	"	June 23	1	2	S	7.3	43	22	1128
" "	" In Jefferson Co N.Y.	1883	"	"	"	1	2	S	4.9	40	21	1188
" "	" In Canada	1883	"	"	"	1	1½	S	3.9	40	21	1184
" "	Ferry & Co.	1883	"	"	"	1	1½	S	4.9	33½	21	1131
" "	Bliss, on Long Island	1883	May 13	May 24	July 5	1	11½	S	5.8	31½	16	1024
" "	" In Jefferson Co.	1883	"	"	" 7	1	2½	S	3.6	42	19	1172
" "	" In Canada	1883	"	"	" 5		11	S	4.0	32	13	1056
" "	Ferry & Co.	1883	"	"	"	1		S	4.2	32	14	1018
First and Best	Sibley & Co.	1882	Apr 15	Apr 30	June 20	3	6	S	9.3	35	16½	1048
First of All	Henderson & Co.	1882	"	" 29	"	3	10	S	13.4	36½	18	1256
" "	" "	1883	"	"	"	3	7½	S	9.2	31	17	1230
Carter's first Crop	" "	1883	"	"	" 21	3	10½	S	13.4	24	12	1164
Dan'l O'Rourke	" "	1883	"	" 30	" 21	3	9½	S	10.2	42	20	1286
McLean's Advancer	Ferry & Co northern N.Y.	1883	May 13	May 23	July 5	1	7	S	4.5	41	22	1108
" "	" " " Mich.	1883	"	" 24	"	1	9	S	4.8	43½	22½	1188
" "	" " Canada	1883	"	"	"	1	9½	S	5.9	40	20	1184
" "	Henderson & Co.	1883	"	"	"	2		S	4.8	41	21	1188
Dwf Blue Imperial	Ferry & Co., Canada	1881	"	"	" 22	3	2	P	14.5	39½	20	832
" "	Henderson & Co.	1883	"	"	"	3		P	11.5	50	23	922
Culverwell's Telegraph	Thorburn & Co.	1881	"	"	" 21	5		S	9.7	71	20	1230
Carter's Telephone	" "	1881	"	"	"	5	3	S	7.0	70	28	1220
Champion of England	Henderson & Co.	1882	"	" 23	Aug 4	5	11	S	10.6	62½	31	1228
" "	" "	1883	"	"	July 18	5	4	S	12.2	39	20	1070
" "	Ferry & Co northern N.Y.	1883	"	"	"	5	3	S	8.3	42½	21	1108
" "	Henderson & Co.	1882	"	" 24	"	5	6		8.3	44	22	1010
Dwf Wrinkled Sugar	Henderson & Co.	1882	Apr 15	May 21	" 12	5	10½	P	72.3	34	16	1120

MAY FLORAL FASHIONS IN NEW YORK.

The demand for plants and cut flowers is unusually large this spring. Since the catalogues were issued by leading growers, there has been a constant stream of orders, and in new varieties of Roses, and plants destined to have a "run," the supply is not sufficient. The leading rage now is for blooming plants of a golden color. Acacias have never before been cultivated in such profusion, nor sold in such quantities. Everyone who has a greenhouse will have an Acacia, even if it is a small one. A certain plantsman has realized $180 from sprays of *Acacia pubescens* cut from one plant. This is a shrub standing 13 feet high.

Streptosolen Jamesonii, the old-fashioned *Browallia Jamesonii*, has been revived, and at once leaped into popularity on account of its golden-flame tints and its graceful habit. *Cytissus racemosus*, or more properly *Genista fragrans*, is the latest craze in yellow-flowered plants. It is a very graceful shrub with bright golden blossoms, and it is somewhat remarkable that it has been so long neglected. Among other plants which are bought up eagerly, are *Coronilla glauca*, *Mahernia odorata* and *Jasminum revolutum*.

Leaving the yellow flowers, we must not overlook *Begonia metallica*, which is sought for its polish and wonderful bronzes; and Staghorn Ferns, which are so curious and ornamental that they are now the most fashionable pendants in greenhouses, and are grown with excellent success in the window. The species of Staghorn Ferns most in vogue are *Platycerium grande*, *P. Willinckii*, *P. biforme* and *P. Wallichii*.

PANSIES.

Pansies have never yet had such prominence as this spring; it is not remarkable, for they are so splendid, and florists are learning how to use this flower in plaques, panels, and corsage bunches, so that its elegance is entirely shown. The Pansy must be so placed that it will look at you, otherwise its contour, its velvet and shadings are not disclosed.

The seedlings of the season have marvellous combinations of color—rich yellows, splashed with maroon; black velvet with an eye of gold; mazarine blue, with scratchings of royal purple, and those plum-colored with gilt edges, and those smoke-tinted with lines of brown and gold marking the petals, and those salmon-colored, pale gray, and bronze, streaked with prismatic pencillings, are indeed "Pansies for thoughts."

WEDDING BELLS.

A new style of wedding bell is one of the fashionable novelties. It is made of white flowers, usually *Lilium candidum*, and at one side has a veil of Roses flung over it. From

the top of the bell are two long cords made of Hyacinth flowerets strung together, which are caught to one side of the room and held by a full tassel of Lily of the Valley sprays. White Forget-me-not is one of the dainty blossoms now in use; it is combined with Moss Rose buds effectively.

FLOWER-HOLDERS.

Birch-bark baskets, hand-painted, or decorated with lichens and fungi, are the newest flower-holders. They are in all colors, the ones that are light being filled with dark Roses, and vice versa. Each basket is trimmed with a sash of satin ribbon. An enterprising florist forced Snow Drops this season, which is the first time this has ever been done in this country: the little white-capped darlings created a furore, and although fragile, have proved charming in decorations when the bulbs have been plunged in *Lycopodium Krausianum aureum* and the Snow Drops have flecked the mossy golden carpet.

BRIDAL FLOWERS AND EASEL STANDS.

The bridal bunches for the weddings this month have all of them contained a spray of Orange flowers. A large hand bouquet made of Trailing Arbutus, with a cluster of Orange flowers at one side, was admirable. An easel stand was made of white blossoms, on which this bunch was placed near the bride during the wedding ceremony.

Pedestals around which growing vines are trained, being rooted in pans at the base, are extremely ornamental for the parlor. Ivies are the plants most used for the purpose.

A vine easel is a beautiful support for a picture, particularly the portrait of a dead friend, whose likeness it is pleasant to surround with fresh growing plants. Bamboo should be the wood of the easel, as it is hollow, and will hold tins, made especially to fit into apertures which should be cut at equal distances—say 18 inches apart. Fit the tins and fill with good soil. In these, plant free-growing vines. Tradescantias and *Lygodium scandens* are the prettiest. Moss over the slits. When the vines are well grown, the bamboo will be entirely garlanded, and a most charming easel will be the result,—far handsomer than ebony or gilt. A portrait on it will be literally framed in vines.

FLORAL DESIGNS.

There are a few florists in the metropolis who seem to be able to weave flowers into any form or design. An entire tea-set was made for a kettle-drum lately. The tray was made of yellow Button Daisies; on it stood cups and saucers composed of purple Heliotrope. The tea-pot or "kettle" was made of Hinsdale Carnations, as was the milk pitcher and sugar bowl.

A coach three feet high was an artistic piece made of flowers for the center of the table when a dinner was given by the Jockey Club. It was so neatly made that every part of the running-gear was distinct. FLORA.

Throughout the Northern States there is generally more profit in late berries than in early ones.

The Kitchen window-garden is frequently the only place in the house where healthy plants are to be found, for the simple reason that it is the only one where exist the conditions favorable to their growth: Even temperature, proper ventilation, and moist atmosphere. The plants are at home there.

ANSWERS TO CORRESPONDENTS.

Marechal Niel Rose. *Mrs. T. C. P., Laprairie, Can.*—This is one of the most beautiful as well as most delicate Roses in cultivation, which even in a special Rose-house requires skilled and careful treatment. It would be useless to attempt its culture in an ordinary room or window.

Baltimore Belle Rose. *E. M. B., Greenfield, Mass.*—This beautiful climbing Rose belongs to the class of Prairie Roses, and is therefore sometimes called simply: Prairie Rose. The Queen of the Prairie, and Gem of the Prairie are varieties of the same class. They are perfectly hardy in this latitude. See article on Roses, page 115 this number.

Grafting Lemon-Trees. *A. G. K., Racine, Wis.*—Lemon or any other trees will bear fruit without being grafted, but the seedlings will rarely produce as good fruit as their parents, if of choice kinds. The object of grafting is to insure the bearing of fruits of the same kind as that of the tree from which the graft is taken, and also to produce earlier fruitage.

Chinese Yams. *J. W. R., Shelbyville, Tenn.*—The bulblets should be planted in deep, rich soil, and covered about an inch deep. If the object is to raise the roots, the soil must be very deep, and the bulblets should be planted about a foot apart, in rows two feet from each other. If for ornament or covering a trellis, for which purpose they are excellently adapted, plant as you would Morning Glories or Scarlet Beans.

Propagating Clematis. *J. R. T., Salem, Oregon.*—Cuttings from the half-ripened young shoots made during the summer months root readily. In a small way, layering young shoots is the easiest and best. This should be done in summer just when the plants begin to blossom. The layers will be rooted by autumn, when they may be detached and transplanted, or left till the following spring, if more convenient.

Forget-me-not. *Subscriber.*—Seed sown now is not likely to produce flowering plants before next spring. It should have been sown last autumn. In THE AMERICAN GARDEN of September, 1884, you will find a special article on these lovely flowers. The questions about the arrangement of flower-beds are answered in the other parts of this number. Everyone interested in flowers should read Mr. P. B. Mead's paper, pages 120 and 121.

How to Make a Star. *Mrs. J. T. L., New York.*—There are but few positions to which a floral star is adapted, and unless it is seen from an elevation or from some distance, it will hardly give satisfaction. In designs of this kind, massive effects are most to be desired, therefore plants of one kind, and of decided colors, are chiefly to be relied upon. Scarlet-Geraniums or *Coleus Verschaffeltii* are not excelled for this purpose.

Painted Daisies. *Mrs. W. A. C., S. C.*—These are in reality not Daisies proper, but annual Chrysanthemums. Great improvement has been made of late in these originally rather coarse plants, so that they are worthy of place in every flower border. They should be sown early in spring, and thinned out to one or two feet apart.

The "*Paris Daisy*," or "Marguerite," is an entirely different plant. It is a perennial, and is forced for winter blooming.

Sporting Geranium. *Mrs. J. J. C., Longootee, Ind.*, writes: "In December I bought an Apple Geranium in bloom, a beautiful crimson semi-double flower, like a Zonal Geranium. After blooming the plant dwindled for awhile, revived, and bloomed again, but the flowers are the usual miserable little white flowers of the common kind." This apparent freak of nature is nothing very uncommon. Double flowers and abnormal colors produced by sports, do frequently return to their original types. Transplanting into rich ground during summer may restore the plant.

Squash Borers. *H. L., Auburndale, Mass.*—This is one of the most obstinate enemies to plant life in existence. The striped bug, which appears as soon as the plants come through the ground, can be kept off by placing over the hills light boxes covered with mosquito netting, but the borers, which come when the vines are nearly full grown, are not so easily subdued. A great many remedies have been recommended, but we have found none better than Hammond's Slug Shot. It should be dusted over the stems early in the morning when they are wet with dew, once or twice a week, as soon as any signs of bugs appear.

OUR BOOK TABLE.

Prairie Experiences in Handling Cattle and Sheep, by Major W. Shepherd, R. E. Published by the Orange Judd Co., New York. A valuable work on the management of Herds, and the great Cattle Industry of the Western Plains. The author has had active experience, is a quick observer, and relates what he has seen and learned in an entertaining and instructive manner. His observations are careful and accurate, and the book will be found interesting to all, and of value to those now living, or intending to follow life, at the Far-West. Price, $1.00.

Western New York Horticultural Society. Proceedings of the Annual Meeting held at Rochester, Jan. 28th and 29th. The reports of the meetings of this model society are always full of highly valuable practical information, and this is no exception to the rule. In a beautiful address, president P. Barry reviewed the present condition and the progress of horticulture; the reports of the various standing committees contain a vast amount of carefully collected information; and among the most important papers read were: Agricultural Botany, by Dr. E. L. Sturtevant; Experiments in Special Manures for Grapes, by Prof. G. C. Caldwell; Lawns and Lawn Grasses, by Daniel Batchelor.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

The Niagara Grape is in demand from Canada to Texas, Maine to California.

J. A. De Veer, late of 318 Broadway, New York, has removed to No. 19 Broadway.

Nash & Brother report a great demand for the deservedly popular "Acme" harrow.

The "King of the Garden" Lima Bean seems to be having something of a "boom" this season.

The Marlboro Raspberry has had a great sale, probably equal to the most conservative hopes of its introducers.

The nursery trade seems to have enjoyed a prosperous season. This is especially true of the liberal advertisers.

Hovey & Co., Boston, report a lively sale for the Early Orange Sweet Corn. We have tried this variety and liked it much.

Joseph Breck & Sons up to April 20 had sold over 10,000 bushels of seed Potatoes this season, of which a large proportion were Pearl of Savoy.

The late spring distributed the shipping season for seedsmen, so that the work was much less arduous than usual. But nurserymen had their work "all in a bunch."

Some seed houses, whose seeds are well known as No. 1 in quality, complain that while the number of orders is very large, yet their average size is below that of previous years.

James Vick says that whereas last year the seed orders of that house were small in average size, this season they are unusually large—which speaks well for the quality of his 1884 stocks.

W. Atlee Burpee is quite enthusiastic over the outcome of the season's trade. He looks upon the present success as the legitimate result of the hard work and good seeds of previous years.

Benjamin Hammond of Fishkill-on-Hudson, N. Y., reports a lively demand for his now famous insecticide, "Slug-Shot." The very warm weather in April is conducive to a vigorous insect life, and we had better look out for the pests.

E. H. Chamberlain of Augusta, Arkansas, has a 200 acre fruit farm there, and wants an intelligent, practical man to take an interest in and management of it, as he is incapacitated by rheumatism. Arkansas offers great opportunities to the fruit grower.

J. A. De Veer, the gentlemanly agent of the General Bulb Company of Holland, and his energetic assistant, Mr. Boomkamp, won a great victory at New Orleans, carrying off the gold medal, four silver medals, and over $410 in cash prizes for their exhibits of flowering bulbs.

The rather numerous failures in the seed trade during the past two or three years, indicate that the era of poor seeds and great profits is at an end. Good seeds, moderate prices, cheaper catalogues and low expenses generally, must now be the rule of action with those who would succeed.

CATALOGUES RECEIVED.

W. W. Hilborn, Arkona, Canada. Catalogue and Price List of Small Fruits.

Arthur E. Rendle, New York. Circular of "Rendle's Acme Glazing" for greenhouses.

Edwin Fewkes, Florist, Newton Highlands, Mass. Price list of Chrysanthemums.

E. B. Underhill, Poughkeepsie, N. Y. Berry Leaf. Price List of choice Small Fruit plants.

Compagnie Continentale d'Horticulture, Gand, Belgium. Price List of Vegetable, Flower and Field Seeds.

Arthur Bryant, Princeton, Ill. Illustrated Circular of the Salome Apple, remarkable for its keeping qualities.

Lewis Roesh, Fredonia, N. Y. Catalogue of Grape-vines and Small Fruits. Colored plate and many illustrations.

Isaac F. Tillinghast, La Plume, Pa. Catalogue of Vegetables and Flower Seeds. Puget Sound Cabbage Seeds a specialty.

F. N. Lang, Baraboo, Wis. Catalogue of northern grown Seeds. Also description and illustration of Lang's Hand Weeder.

F. K. Phœnix & Son, Delavan, Wis. Price List of fruit and ornamental trees, small fruit plants, etc. Root grafts a specialty.

W. E. Bowditch, Boston. Illustrated Descriptive Catalogue of Garden and Flower Seeds, also Greenhouse and Bedding Plants.

George S. Josselyn, Fredonia, N. Y. Catalogue of American Grape-vines and Small Fruit plants. The Empire State Grape a specialty.

J. M. Ayre, 130 Dearborn street, Chicago, Ill. Descriptive Circular of the Diamond Ventilator for public buildings, dwellings, refrigerators, cars, etc.

Bush & Son & Meissner, Bushberg, Mo. Semi-annual Price List of American Grape-vines. This is one of the largest Grape nurseries in the country.

Bowker Fertilizer Co., Boston and New York, issue an interesting pamphlet on the Stockbridge Manures, giving many reports of remarkable crops grown upon these fertilizers.

Johnson & Stokes, Philadelphia. Garden and Farm Manual. A very complete list of all the best new and old vegetable and flower seeds. The Market Champion Tomato a specialty.

S. Pennock & Sons Co. Kennett Square, Pa. Catalogue of improved Road Machinery. These machines are renowned for simplicity, durability and cheapness as general road-workers.

Pratt Brothrs, Rochester, N. Y. Descriptive Circular and beautiful colored plate of Empire State Grape now introduced by this firm. This is one of the most promising white Grapes yet introduced.

Briist's Garden Seeds, Philadelphia, offered in the neat Catalogue sent out this year, have long held an enviable position for excellence and purity. The Belle Tomato is one of the novelties of the firm.

John G. Burrow, Fishkill, N. Y. Illustrated catalogue of Grape-Vines, Small Fruits, etc., with some excellent introductory hints on Grape growing, and accurate descriptions. Jefferson a leading specialty.

A. M. Purdy, Palmyra, N. Y., sends out a bright catalogue of everything in the Small Fruit line. The cover has colored pictures of his leading specialties, the Crimson Beauty Raspberry and the Jumbo Strawberry.

Hance & Borden, Runson Nurseries, Red Bank, N. J. Catalogue of fruit and ornamental trees, shrubs, vines, small fruit plants, etc. Meech's Prolific Quince, and Mulberries for silk and ornamental stock are specialties.

Arthur E. Rendle, Corner Broadway and Wall Sts., New York. Patent "Acme" Glazing. This system consists in glazing without putty and was used on the largest conservatory in the world, Horticultural Hall at New Orleans.

Hale Brothers, South Glastonbury, Conn. Catalogue of Small Fruit plants, Fruit-trees, etc., containing a complete list of all the best new and old varieties. This firm makes a specialty of "Pedigree Stock," never using plants from old and worn-out fruiting beds.

THE AMERICAN GARDEN PRIZES OF $1,000

For New Fruits, Flowers and Vegetables.

For the promotion of horticulture, THE AMERICAN GARDEN offers the following prizes of $100 each, or silver plate of equal value. No varieties now upon the market to compete.

(*a.*) The prizes for fruits to be awarded by a committee or committees, chosen by or from the American Pomological Society; the awards to be made in the fall of 1886 or at such time as the committee may decide that the conditions shall have been met.

(*b.*) The vegetables to be exhibited at the next two annual meetings of the American Horticultural Society and at the fall exhibitions of two or more State societies; the prizes to be awarded in the fall of 1886, by a committee chosen by or from the American Horticultural Society.

(*c.*) The flowering plants to be exhibited at two meetings of the Society of American Florists, and of the New York and Massachusetts Horticultural Societies in 1885 and 1886, and the prizes to be awarded by a committee chosen byor from the Society of American Florists.

(1) *For the best Grape* which shall combine territorial adaptability and superior shipping qualities, with superior table quality; $100 or plate. To be exhibited at the next meeting of the American Pomological Society, and at two or more State exhibitions for two or more years.

(2) *For the best Strawberry* which shall combine territorial adaptability and superior shipping qualities, with superior table quality; $100 or plate. To be exhibited at the next two June meetings of the New York and Massachusetts Horticultural Societies.

(3) *For the best Raspberry* which shall combine hardiness, productiveness and superior shipping and table qualities; $100 or plate. To be exhibited at such times and places as the committee may decide.

(4) *For the best Gooseberry*, which shall combine large size, productiveness and freedom from mildew. To be exhibited same as (3.) $100 or plate

(5) *For the best Blackberry* which shall combine large size, good quality, hardiness and productiveness. To be exhibited same as (3.) $100 or plate.

(6) *For the best New Fruit*, (a new species is required) to thrive north of Virginia and Kansas, $100 or plate. To be exhibited at two or more State or National Society meetings for two years in succession.

(7) *For the best new Potato* which shall combine superior quality, productiveness, freedom from disease. To be exhibited as above, (*b.*) $100 or plate.

(8) *For the best new Vegetable* other than Potato (either a new variety or species), table and shipping qualities, and profitableness of culture to be considered. To thrive north of Virginia and Kansas. To be exhibited as above, (*b.*) $100 or plate.

(9) *For the best flowering Shrub*, which shall be hardy in the Northern States east of the Rocky Mountains. To be exhibited as above (*c.*) $100 or plate.

(10) *For the best herbaceous Perennial flowering plant*, which shall be hardy in the Northern States east of the Rocky Mountains. To be exhibited as above (*c.*) $100 or plate.

We reserve the right to modify the above conditions in such manner as may appear to be for the greatest benefit to American Horticulture.

We invite correspondence and suggestions on the above offers to the end of making them as useful as possible.

We shall make no claims or conditions whatsoever that would influence the naming or disposition of the prize-winning varieties.

The competition is open to North America.

GOOD LUCK TO ALL WHO READ.

Good Luck with Fruits, Flowers and Vegetables.

Good · Luck · in · the · Garden, · Orchard · and Vineyard.

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Please tell all your neighbors that THE AMERICAN GARDEN will be sent to any address from JUNE to DECEMBER, inclusive, for only 50 cts.

I have found it of much benefit in my amateur efforts in the garden and conservatory. I shall take pleasure in recommending it to all who are similarly interested.—*Jno. McLaren, Orangeville, Canada.*

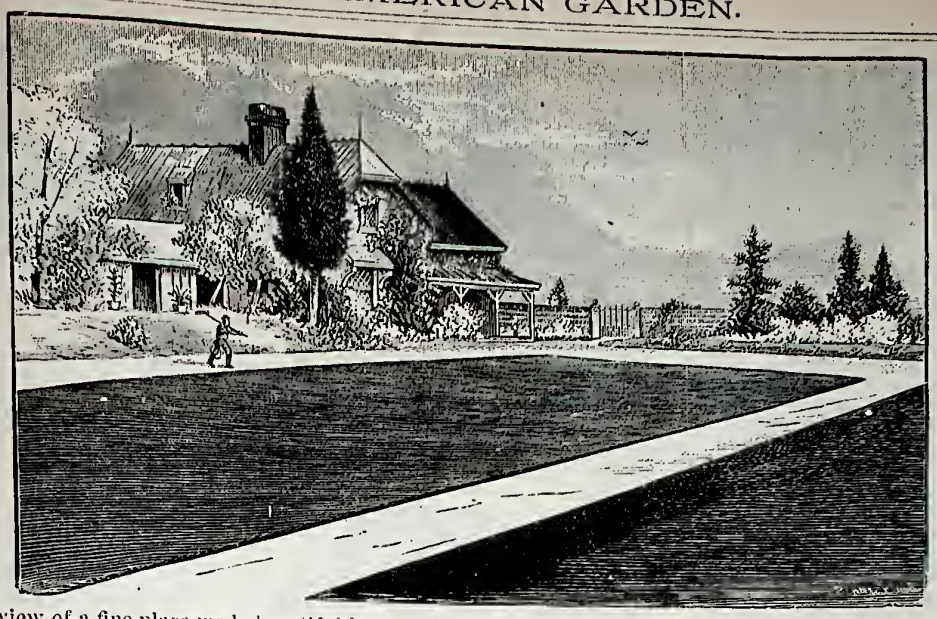
I did not hesitate to subscribe when I saw Mr. Falconer's name. He has answered many questions for me, that have been a great help to myself and many others. I will try to get you some subscribers. Your paper has been much improved since I saw some copies a year or two ago.—*Miss Jennie Downes, Morgan Co., Ill.*

Since the change of management, several months ago, this magazine has shown steady improvement. It is a model of typographical neatness.—*Hearth & Hall.*

The offer of the Marlboros and The American Garden ought to bring you 10,000 subscriptions this month.—*Cornelius Powers, Lorain Co., O.*

See advertisement of the **Extra Early Orange Sweet Corn**, by Hovey & Co., on page 131.—*Adv.*

To secure summer boarders, the *Boston Daily Transcript* is the best advertising medium. It is the leading family paper. Send for rates.—Adv.



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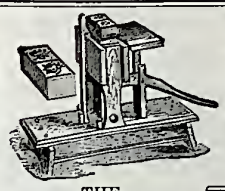

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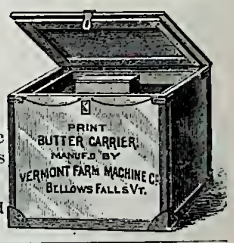

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WE OFFER

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Sucker State, Piper's Seedling, Old Iron Clad, Catalpa, Russian Mulberry, Red Cedars, &c., &c. Write for Price Lists.
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Our choice *IMPORTED ROSE PLANTS* are two and three years old, and from one to four feet high. They will produce 20 to 40 flowers on each bush the *first season.* Only the best varieties are sent out, and all are carefully labelled. Directions for planting and treatment are sent with each order. The Roses we offer are those which florists buy to force for cut flowers for spring sales. They are far superior to the little things sent out by some dealers in two and four inch pots.

Prices: 10 strong plants, $1.50; 25 plants, $3.50; 50 plants, $6.50; 100 plants, only $12.00. Standard Tree Roses, $5.00 per doz. Send orders to

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HAS been Published over Thirteen Years. Is the best Monthly Magazine ever published upon fowl-keeping, for pleasure and profit. Splendidly illustrated. Practical.

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Prevents Apple and Peach Borers, destroys Bark Lice and Orange Tree Scale, stops Mice and Rabbits from Girdling Trees. Also a remedy for Pear Blight, Sun Scald, Frost Cracks, Black Knot, etc. Sold by Seed Houses, Nursery-men, and Florists everywhere. Send for Descriptive Price Circulars and Testimonials **NOBLE A. TAYLOR, Manufacturer, 105 Clark St. Brooklyn, N. Y.**

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Lovett's Excelsior Crates, Acme Crates and Delaware Crates; Berry Baskets both Quarts and Pints, Peach Baskets and Grape Baskets, all of the best designs and manufactured of best material in the best manner. "The best is always the cheapest." Those who want the best and are willing to pay a fair price for them will please send for circular mailed free to all applicants. **J. T. LOVETT, Little Silver, N. J.**

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Prices to suit the Times.

Plants 5 cents each. Seeds 3 cents a package.

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Every Premium for *Long Keeping* Butter. Lot B, Class 1, was awarded to butter made by the Cooley Process. Also *First Premium* for Sept. or Oct. butter, Class 2, and the First *Premium* for Print butter.

Remember the *Cooley* has a *Patented Process.* Others imitate construction but cannot use the process.

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With all the other varieties growing here, and with a knowledge of those catalogued throughout the world, we claim that the Marlboro has not an equal in desirable quality. We have invited all interested to come and see it, and neighbors and strangers without a single exception bear us out in the above statement. Interested parties and partisan journals may continue their misrepresentations. We say, come and see its earliness, its hardiness, its great growth of bush and unequalled size and perfection of all the berries. We also want you to eat it and try its solidity. Part of the crop was sent to Montreal, 450 miles by rail, in good order. First shipment brought 60 cents per quart, wholesale in New York, and ruled higher throughout the season than any other variety. Our new seedling grape, the

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Send 10 CENTS for ONE OUNCE or $1.10 for ONE POUND of our splendid mixture; which includes all the popular named varieties.

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Color the Buttermilk or Turn Rancid.

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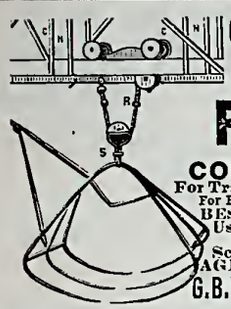

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Seed stock from the originator. THE MOST PROLIFIC OF 126 VARIETIES in a comparative test. Yielded this year over 2,300 lbs. from 1 lb.

Quality equal to the old Peachblow. Bushel $5, peck $1.50.

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The only true dent corn that ripens in New England. This has ripened perfectly for the past three years. Very productive. Fine quality for table and stock. Millers say it is the best for grinding, better than western grown corn. Bushel $2.50; peck 75 cts.; half peck 40 cts.; quart 20 cts., all by express. Sacks free.

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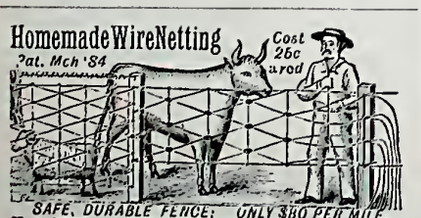
Refers to the publisher of this Magazine.



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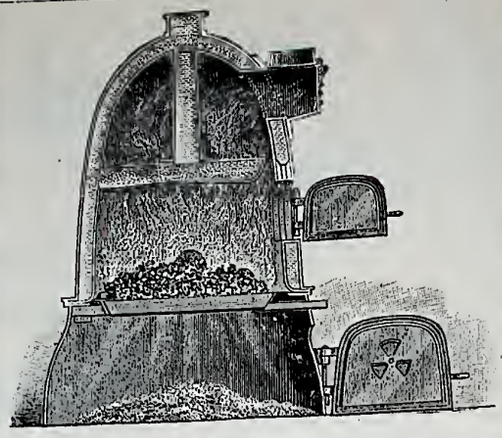

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Galvanized Screw Eyes and Wire for Trellis-work.

Send for Catalogue.

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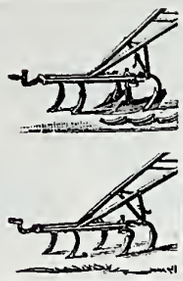

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As lately introduced, has no equal in the world. Its excellent work in the field has distanced that of all competitors. It is, in some sections, doing in one passage, the work of four or five old-style implements, and in others superceding the cumbersome and expensive two-horse tools. The "PLANET JR" HAND SEED-DRILLS AND WHEEL HOES are the newest and best, lightest and strongest known. There are 7 distinct tools, each with special merits, no two alike or the same price; all practical and labor-saving. Let no Farmer or Gardener fail to study up during the winter evenings our 1885 CATALOGUE, which gives reduced prices, careful and exact engravings of these different machines, and such descriptions as will enable the reader to judge correctly of their merits. Thirty pages and Forty engravings. Free to all. Correspondence solicited.

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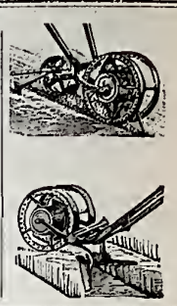

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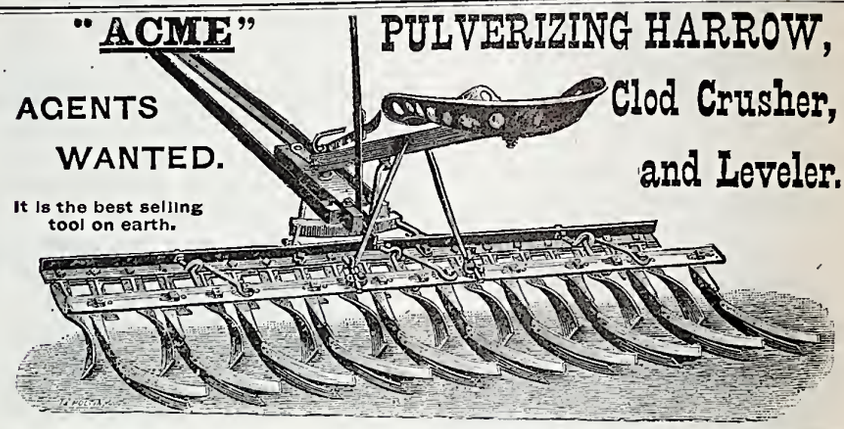
AGENTS WANTED.

It is the best selling tool on earth.



The "ACME" subjects the soil to the action of a **Steel Crusher** and **Leveler**, and to the **Cutting, Lifting, Turning** process of DOUBLE GANGS of **CAST STEEL COULTERS**, the peculiar shape and arrangement of which give **immense cutting power.** Thus the three operations of **crushing** lumps, **leveling** off the ground and thoroughly **pulverizing** the soil are **performed at the same time.** The entire absence of **Spikes or Spring Teeth** avoids pulling up rubbish. It is **especially adapted** to inverted sod and hard clay, where other Harrows utterly fail; works perfectly on light soil, and is the only Harrow that **cuts over the entire surface** of the ground.

Variety of Sizes, 4 to 15 feet wide.——We deliver free at our distributing depots.

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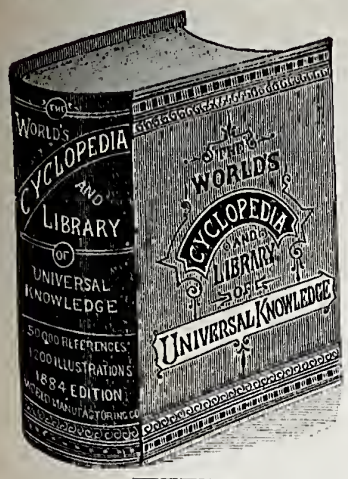

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The publisher of THE AMERICAN GARDEN, then specialist to Hiram Sibley & Co., in a test at Rochester, N. Y., in 1883, found this to be the **MOST PROLIFIC OF ANY OF 125 VARIETIES,** and equal in quality to any of them.

Last season it again yielded enormously. From one pound of seed, H. C. Pearson, N. Y., grew 2,558 lbs.; A. Rose, N. Y., 2,349 lbs.; C. F. Thompson, N. H., 2,118 lbs.; Chas. C. Miller, O., 1,677 5-7 lbs.; G. W. P. Jerrard, Me., 1,638 1-4 lbs.; E. H. Vick, N. Y., 1,320 1-2 lbs.

These yields are certified to by Wm. Hamilton, Caledonia, N. Y., President of Western New York Agricultural Society; James S. Grinnell, Greenfield, Mass., formerly Acting Commissioner of Agriculture, at Washington, D. C.; John E. Russell, Boston, Mass., Secretary of State Board of Agriculture of Massachusetts; I. P. Roberts, Professor of Agriculture at Cornell University, Ithaca, N. Y., committee.

These enormous yields of potatoes, grown from one pound of seed by careful cultivation and with the liberal use of a high grade fertilizer, are worthy the consideration of all interested in the culture of the potato, or in the possibilities of reproduction in the Vegetable Kingdom. 2,558 pounds from one pound of seed greatly surpasses, we believe, anything heretofore recorded in the culture of the potato. That more than a ton and a quarter, or 42 1-2 bushels, should be grown from one pound of seed is truly marvelous. (*Report of Committee.*)

My seed is direct from the originator, and my stock is warranted genuine. (*Only selected tubers are sent out.*)

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WM. YOUNG, Jr., Hopkinton, Mass.

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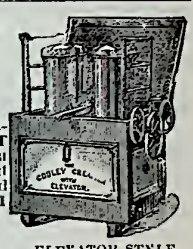
The Records Show

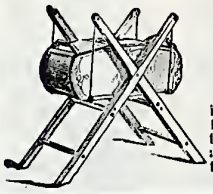
That the Butter-Yield of the

COOLEY CREAMERS

has never been equalled by any creamery, pan, or separator. They carried off the premiums for the **GREATEST PER CENT OF YIELD** in the great dairy States of Iowa and Wisconsin. **Their combined products of butter and cheese reaching nearly sixteen pounds to the hundred pounds of milk. They take the lead in the CREAM GATHERING SYSTEM.**



ELEVATOR STYLE.



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AWARDED SIX SILVER MEDALS

in the last four years over all competitors. Because it operates the easiest. Because it churns more thoroughly, and consequently makes the most butter. Because it is the easiest to clean. Because the cover is always on top, avoiding all leakage and emptying the cream on the floor, as is frequently the case with revolving churns. Send for Illustrated Circulars.

Vermont Farm Machine Co., Bellows Falls, Vt.

Summary of Fortieth Annual Report.

NEW YORK

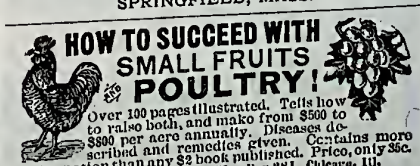
LIFE : INSURANCE : CO.

Received in Premiums,	$11,268,850.76
Received in Interest, Rents, etc.,	2,971,624.63
Total Income,	**$14,240,475.39**
Paid Death-claims,	$3,257,175.79
" Endowments,	873,808.50
" Annuities, Dividends, and for Policies Purchased,	3,603,970.85
Total Paid Policy-holders,	**$6,734,955.14**
New Policies issued,	17,463
New Insurance written,	$61,484,550.00
Cash Assets,	**$59,283,753.57**
Divisible Surplus (Co.'s 4 per cent. standard),	$4,371,014.90
Tontine Surplus (Co.'s 4 per cent. standard),	2,633,796.70
Total Surplus at 4 per cent.,	**$7,004,811.60**
Surplus by State Standard (estim'd)	$10,000,000.00
Insurance in Force,	229,382,586.00
Increase in Income,	579,124.73
Excess of Interest over Death-losses,	714,448.81
Increase in Assets,	3,740,850.85
Increase in Insurance in force,	30,636,543.00

A. P. CHILDS,

Gen'l Agent for Vermont and Western Massachusetts,

SPRINGFIELD, MASS.



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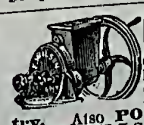

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SUPPLEMENT A. IT is the intention to have ready for delivery at the same time as "The Horticultural Directory of the United States," "SUPPLEMENT A," which will be a list giving the names and post-office addresses of the Nurserymen, Florists, Fruitgrowers, and Seedsmen of England, Ireland, Scotland, Wales, and the Channel Islands, comprising in all about two thousand addresses. The Supplement will be issued in pamphlet form, and will be sold to subscribers to the "HORTICULTURAL DIRECTORY" at one dollar ($1.00) per copy; to non-subscribers at one dollar and fifty cents ($1.50) per copy, postage paid. The trade must bear in mind that the rate of postage to points covered by the Supplement is only one cent for unsealed circulars weighing not more than two ounces. The business in Horticulture between the two English-speaking countries is yet in its infancy, but is growing rapidly.

SUPPLEMENT B WILL be issued April 15, 1885, and will comprise the names and addresses of the principal Nurserymen, Seedsmen, and Florists of Austria, Bavaria, Belgium, Denmark, France, Germany, Holland, Hungary, Italy, Poland, Russia, Saxony, Sweden and Norway, Switzerland, Wurtemburg, Brazil, India, Japan, Australia, New Zealand, and South Africa. Price, same as "Supplement A." Subscriptions and remittances must be made to

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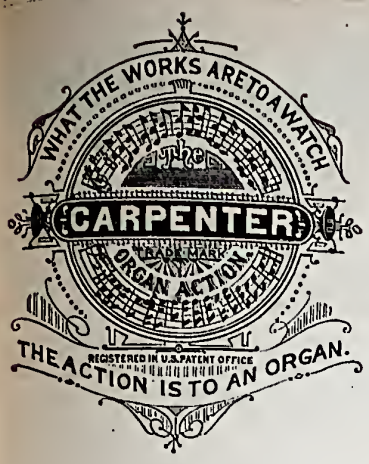

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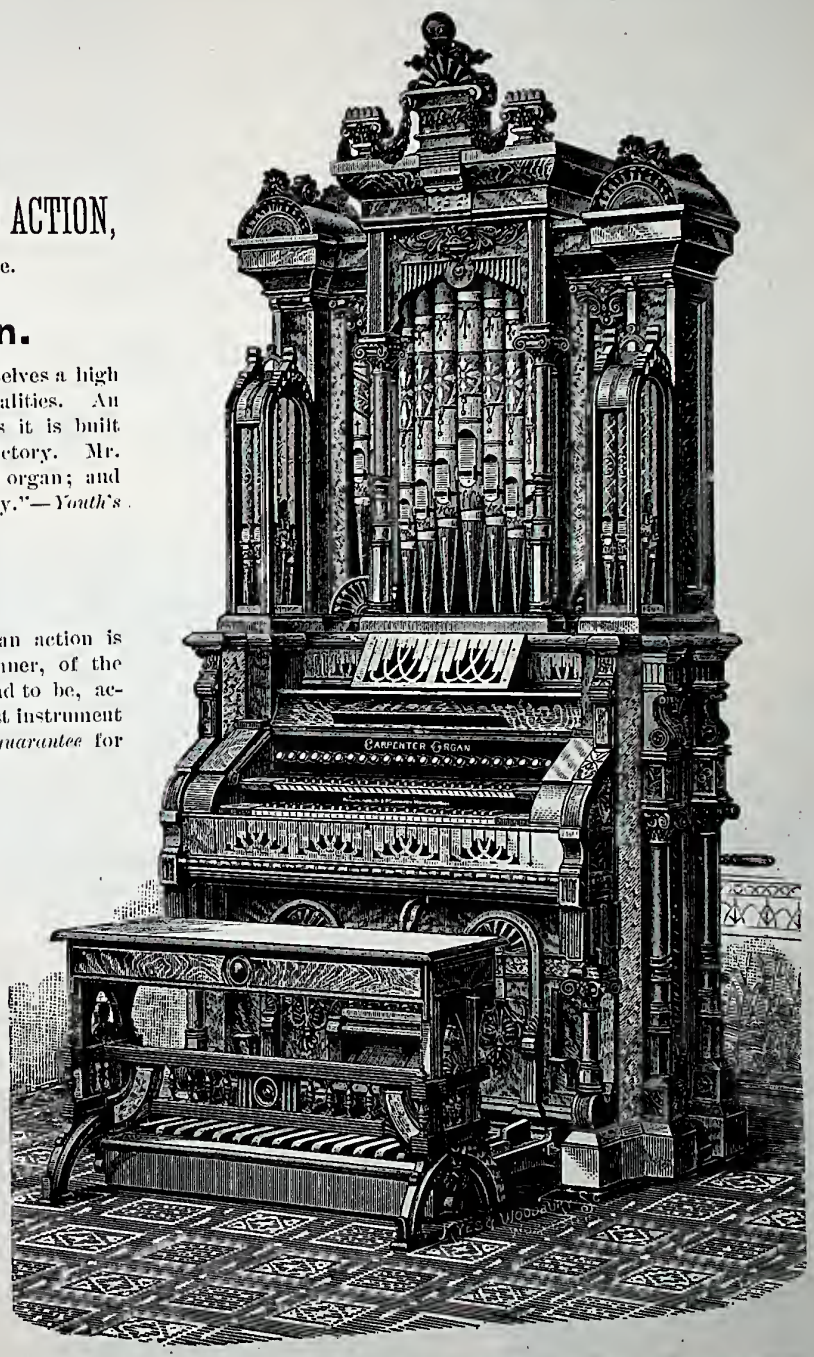

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(*a*.) The varieties put in competition are to be shown at three or more State, National, or other equally important exhibitions, in 1885 and in 1886, under the rules of the societies where exhibited. The awards will be made by committees—chosen from among members of the American Pomological Society for fruits, American Horticultural Society for vegetables, Society of American Florists for flowering plants—in the fall of 1886, or at such times as the committees shall decide that the conditions have been met.

(1) *For the best Grape* which shall combine territorial adaptability with superior shipping and table qualities. A vine with the current year's growth, a portion of the previous year's growth, with all fruit and foliage growing thereon intact, and at least six bunches of grapes shown separately, to be exhibited as above (*a*). $100 or plate.

(2) *For the best Strawberry* which shall combine territorial adaptability with superior shipping and table qualities. A plate of not less than 50 berries, and three plants with all roots, foliage and fruit intact, to be exhibited as above (*a*). $100 or plate.

(3) *For the best Raspberry* which shall combine hardiness, productiveness and superior shipping and table qualities. Same conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(4) *For the best Gooseberry* which shall combine large size, productiveness and freedom from mildew. Same conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(5) *For the best Blackberry* which shall combine large size, good quality, hardiness and productiveness. Conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(6) *For the best New Fruit* (a new species is required) to thrive north of Virginia and Kansas. To be exhibited as above (*a*). $100 or plate.

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(8) *For the best new Vegetable* other than Potato (either a new variety or species), table and shipping qualities and profitableness of culture to be considered. To thrive north of Virginia and Kansas. To be exhibited as above (*a*). $100 or plate.

(9) *For the best new flowering Shrub* which shall be hardy in the Northern States east of the Rocky Mountains. To be exhibited as above (*a*). $100 or plate.

(10) *For the best new herbaceous Perennial flowering plant* which shall be hardy in the Northern States east of the Rocky Mountains. To be exhibited as above (*a*). $100 or plate.

We shall make no claims or conditions whatsoever that would influence the naming or disposition of the prize-winning varieties.

The competition is open to North America.

The names of the committees will be announced as soon as the lists can be completed.

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Parties intending to compete are requested to inform the undersigned, for record.

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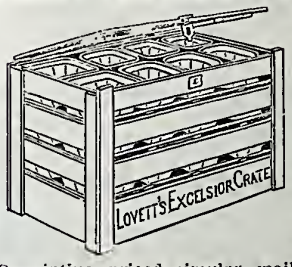

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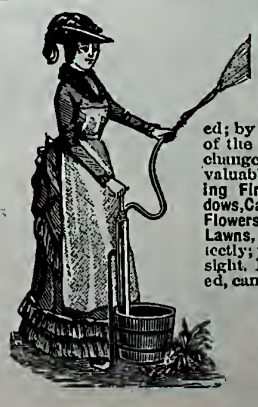

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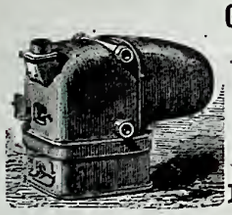

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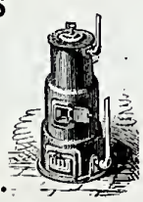

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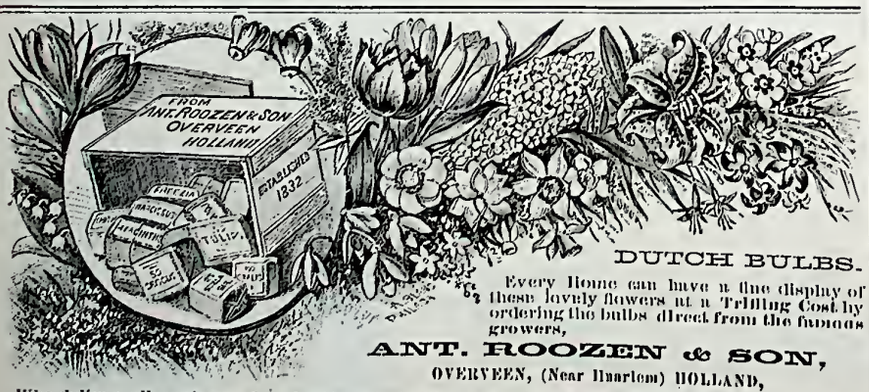

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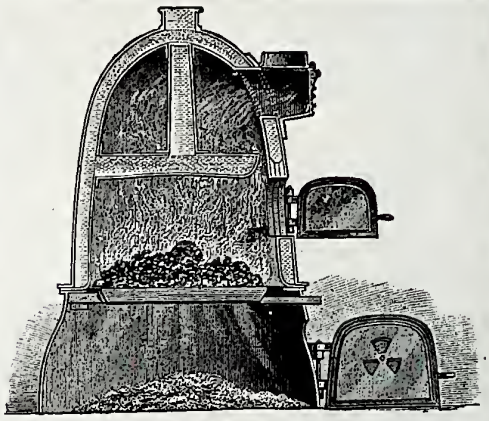

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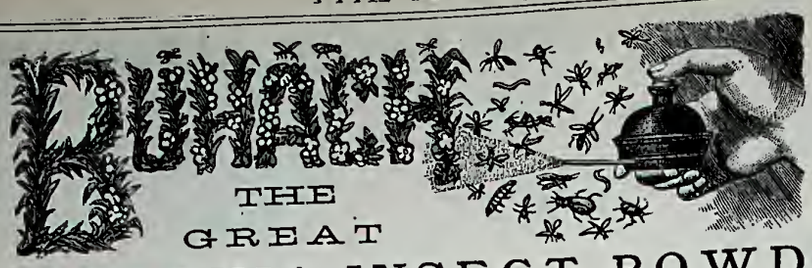

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The Dreaded Rose-Bug, impervious to Paris Green and all other Arsenical Compounds, gives up the ghost to BUHACH.

BUHACH POWDER will kill Rose-bugs. Last year it was blown upon them through bellows. This year we propose to use a Buhach extract, made by dissolving four ounces of the powder in a gill of alcohol and then adding one gallon of water, applied with force pump and "cyclone nozzle." We do know that Buhach will kill cabbage worms and the dreaded rose-bug.—*Rural New-Yorker*, April 25, 1885.

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SLUGS, CATERPILLARS, GRUBS, ETC., ETC. I find it very fatal to slugs, caterpillars, grubs, flies, mosquitos, and both parasitic and plant lice.—*A. J. Cook, Entomological Laboratory, Agricultural College, Lansing, Mich.*

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19 BROADWAY, NEW YORK CITY.

The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

Vol. VI.
Old Series, Vol. XIII.

JUNE, 1885.

No. 6.

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The Vegetable Garden.

SEASONABLE HINTS.

Nearly all kinds of vegetables may still be sown and planted, and later even, for successive crops. It should be the constant aim of the gardener to have all his ground occupied as much as possible, that is, by useful plants. Weeds will soon enough occupy any land that is not kept under constant cultivation. Beets, Beans, Corn, Cucumbers, Melons, Squash, Peas, Potatoes, Salsify, Parsnips, and many other vegetables may be sown or planted this month.

Firming the Soil when sowing seeds is of far more importance than most persons are aware of, and many failures are the direct result of such omission. This fact was forcibly brought to our mind last year. We had sown two rows of Parsnips in very dry ground. One row had been firmly packed by walking on it, when a sudden shower prevented treating the other in the same manner, and supposing that the rain would have a similar effect, the soil was never packed. But our supposition proved erroneous. The first row came up quickly and vigorously, while the second sprouted very slowly and came up so poorly that it was thought not worth cultivating, and was afterwards spaded under and re-sown.

Dr. E. L. Sturtevant's experiments in this direction are highly instructive, and give unmistakable evidence of the great importance of firming the soil. Oftentimes, Corn that is planted early, says the Doctor, is put in the ground while the land is in a lumpy condition, and no pressure brought to bear to bring the soil in close contact with the Corn. The open spaces thus left about the seed tend to retard, and, under the varying conditions of heat and moisture, often destroy, the germinative process. So marked is its influence, that the per cent of germination by actual trial (as observed between two plats, both of which were planted at the same time, but upon one of which the soil was firmly pressed upon the seed with the foot, and upon the other the seed carefully covered by means of a hoe in the ordinary method) was largely in favor of the trodden plat. This trial was in accordance with a practical experience in farming, whereby it was found that the gain in crop through the use of a western Corn planter whose wheel compressed the soil over the seed as planted, compensated largely for the first expense of the machine.

Cucumbers for pickling are an important crop in various sections of our country. In the vicinity of New York the 20th of June is considered the correct time for planting the seed. A week earlier or later makes but little difference, except that in planting much earlier the vines are in danger of falling a prey to the striped bug. The principal conditions for a successful pickle crop are rich, rather moist soil, and perfect cultivation from the day the plants show themselves till the vines cover the ground. As soon as there are any pickles of proper size, they have to be picked, or better cut off with a sharp, small knife or a pair of scissors, continuing to pick the vines *clean* every other day at the utmost; better every day during the height of the growing season.

SUCCESS WITH MELONS AT THE NORTH.

For a number of years I succeeded in raising good Watermelons by making a bed of sand. The sand was spread upon the surface of the ground, which was a clay loam, to the depth of six inches, and the seeds were planted in hills enriched with fine manure. Holes were dug through the sand and into the earth underneath. The bed of sand would last for a few years, when it would have to be renewed.

Last year I tried another plan, which proved more successful than the old one, and less troublesome. The Watermelon plants are started in the hot-bed, which is simply a frame with window sash over, and horse manure under to furnish the heat. The seeds are put into flower pots filled with sand and bedded into sand on top of the manure. When these plants come on they are thinned to one in each pot, and when they are large enough and the ground has become warm, they are transplanted into hills, in which finely rotted manure has been mixed with the soil.

The process of transplanting is very simple, as the plant is readily loosened in the pot and comes out with the sand and roots in a snug ball. The earth is firmly pressed around the plant and then a circle of sand about three feet in diameter is placed around it. Very little more attention is necessary, except to keep the weeds down. The hill of sand attracts the heat which is necessary to mature this semi-tropical fruit. A small pile of stones would answer the purpose very well. It is an advantage to plant the Watermelons on the south side of a stone wall, or a board fence, as they will reflect the heat of the sun.

The pots must not be filled with compost or manure, else worms may be bred in them which will destroy the plants while yet in the pots. Clear sand is the best. Under this plan the finest varieties of Watermelons may be had in abundance even in high latitudes. Muskmelons do not require so much heat, but may be advanced, and ripen earlier, by starting them in pots as described. A hill of sand around Muskmelons will also promote their growth and early ripening.

F. D. CURTIS.

MORE ABOUT SQUASHES.

The article in a recent issue of THE AMERICAN GARDEN on "The Squash and its Culture," was both interesting and instructive and suggested a comparison with my own experience.

Considering the number of new varieties, both early and late, introduced within the past few years, it is surprising that there has not been more decided improvement. It is a question, whether among all the new sorts, we have any that are really better adapted in quality or productiveness for general culture than the old varieties of twenty-five or more years ago. These old stand-bys,—the Summer Crookneck for early, Boston Marrow as intermediate, and Hubbard for general use,—have stood the test of time, and are yet more popular throughout the country than those of recent origin.

The Boston Marrow may have deteriorated somewhat in quality in the past few years, but in yield it is fully up to the old standard, and does not appear to have the tendency to "run out" which is so marked a characteristic of some other vegetables. I would not by any means be understood as condemning all the new varieties of Squashes. There are some of evident merit, and these may be improved upon in time, while the older sorts may lose their vitality and become superseded by others.

I was very favorably impressed with the Olive, which I tested the past season. It is rather late in ripening, and as mine were not planted as early as they should have been, they did not mature properly, yet they grew to a fine size, and considering the unfavorable season, were of unusually good quality and kept very well; one specimen was preserved in perfectly good condition until February 3d. I have not tested the Pineapple, but several of my acquaintances who have, pronounce it watery and unpalatable.

The Perfect Gem seems to meet with favor in many localities, but it is absolutely worthless with us, in Vermont, and this is the verdict given it by others who have tested it in this locality.

W. H. RAND.

SWEET POTATOES IN KENTUCKY.

A loose, sandy soil is generally considered best for Sweet Potatoes, but here we prefer a rich, or moderately rich, firm soil. The ground is broken thoroughly, and well pulverized; then ridges are thrown up with a siding plow, from four to five feet apart, from middle to middle; then the whole is gone over with the hoe, the soil drawn up into a smooth, even ridge, a little flattened on the top. This work is done just as the slips are ready for setting, as then the soil is fresh and the plants will have the start of the grass and other weeds.

When the slips in the hot-bed are large enough draw them on an evening, have a puddle of dirt and water ready, into which stir well the roots, then plant them in the ridges, about eighteen inches apart, in holes made with a small wooden paddle or a trowel; then draw the soil to the plants, and press it firmly about the roots. No more need be done to insure their surviving, unless the weather is very dry and hot, then they should be watered for a few evenings.

So soon as the slips show that they are firmly established, and begin to grow, go over the ridges with a hoe, stirring the soil slightly, taking care to destroy all other growth. I never use the plow after throwing up the ridges; but stir the surface well with the hoe, and as often as the soil seems to need stirring or becomes weedy. This is done till the vines spread so as to prevent further cultivation.

The slips are raised in a hot-bed by throwing in first a layer of forest leaves, sufficient that when pressed down it will be five or six inches thick; then fresh stable manure over this to the depth of about a foot, pressed down. On this spread rich, loose, loamy earth; rake smooth; then press the Potatoes in this close together, but not so that they touch each other, then cover with rich loam, or compost. Earth may be thrown up around the sides of the frame to keep in the heat, though we seldom find this necessary. The bed should be covered against cold and rain, till the plants begin to appear, when it may be left open to the weather; but previous to this, as rain is excluded, the bed should be frequently watered with tepid water.

JAMES I. BAIRD.

MULCHING POTATOES.

We do not give the mulching of Potatoes that attention or practical experimental investigation it deserves. The Potato raiser has many foes to contend with, and yet above frost and insects, he suffers more financial loss from the heat and drought of our summers.

The Potato requires a moist soil and a cool season. Mulching would certainly tend to give both. I am pretty well convinced that planting deep or hoeing up the hills is beneficial, simply because it has somewhat the effect of a mulch—keeping the Potatoes in cooler, moister soil. Where the soil is moist and the climate cool, flat culture does best; this shows that because deep planting or hilling does best where the ground is dry or the weather hot, is simply because it is in effects not dissimilar to a mulch. I have noticed that Potatoes did better upon a stiff sod than upon a soil fully as rich but not soddy; and I think it is because the sods lying on top of the ground act as a mulch. We all know that for Potatoes clay soil is better than sandy soil. Why? Because it is colder and damper. Mulching would make the sandy soil colder and damper.

The cost is not great. Straw or vines are cheap. Most of us can get the materials for a mere pittance. Then the straw or vines are not lost by any means for they will manure the ground. Mulching saves hoeing. That is quite an item when you are compelled to pay for the labor, and a bigger item when you have to do it yourself. The man or boy never was, that liked to hoe Potatoes, especially on new land.

Among the experiments conducted at the Missouri Agricultural College by Prof. J. W. Sanborn, was one to determine what effect mulching would have upon Potatoes. The season was peculiarly unfavorable to an exhibition of the benefits of mulching. The experiments were conducted carefully. Plats of land lying side by side were marked off, and each alternate plat mulched. The others were cultivated in the usual manner. A mistake was made in mulching too heavily, so that quite a percentage of the plants failed to come through. Yet notwithstanding all the unfavorable circumstances the results were most gratifying to the advocates of mulching.

The total yield of Burbank Potatoes, mulched, was 50 per cent more than those not mulched; and while of the former the proportion of table Potatoes to those too small for use was as eleven to two, the proportion among the latter was only as four to one. The test upon Peachblows showed a difference in favor of the mulched Potatoes of 126 per cent on the total yield; and while the proportion of table to small Potatoes was as six to one among the mulched, it was only as three to two among the unmulched. If one swallow made a summer, then the one experiment at this Agricultural College would prove the great profit of mulching for the Potato crop at least. But we want further tests. JOHN M. STAHL.

LONG STANDING SPINACH.

A most serious objection to the summer cultivation of Spinach, is the inclination of the older kinds to go to seed quickly in warm weather. It is from this cause, more than any other, that this excellent vegetable is not found in every private garden.

LONG-STANDING SPINACH.

The Long Standing Spinach, a variety of recent introduction, is a decided improvement in this direction. In general appearance and quality it resembles the Round Leaved variety, but its great merit consists in not running to seed as rapidly as this, or, in fact, any other kind. In a trial on our grounds it was fully three weeks later in forming seed stalks than the Savoy. Leaved growing along side of it.

ORNAMENTAL-LEAVED BEETS.

Beets as ornamental foliage plants are among the later years' novelties, and, in reality, few out-door plants surpass the rich, deep crimson color of even some of our common garden Beets.

One of the best ornamental kinds is the Victoria Beet, or *Beta hortensis metallica*, represented in our illustration. It is of very robust growth, and of a rich, deep metallic crimson hue. Its cultivation is the same as that of ordinary Beets, but when required especially for ornamental purposes, it is recommended to start it in frames, and transplant to its permanent location, so as to produce immediate effects. As division rows between the different parts of the garden, or planted against hedges their effect is unique and attractive in any garden. We have had good success with it as hedges.

THE VICTORIA BEET.

A GARDEN MARKER.

A very convenient marker for the garden can be made readily of a piece of plank three feet five inches long, and about six inches wide by one thick. On one side I put four runners 12 inches apart; these should be at least two inches wide, six inches long, and one and a half inches thick, rounded at the front corner like sled runners, and wedge-shaped on the bottom. On the other side I placed the runners 18 inches apart, which is about the best distance for most garden crops. A good broom-handle will make a tongue to pull it by. With this three or four drills can be made at once, and one stretching of the line will answer for all.

Planting everything in the garden in drills is much the best plan, or even when a seeder is used, the marker is of sufficient aid to pay for the trouble of using. I simply nailed mine together and was not over a half an hour making it, while it will save that much time in a day's gardening.

I use a hand-seeder in sowing the greater proportion of garden crops, and by marking off the drills with a marker, I find I can do better work than by attempting to follow a line each time; and having the rows straight aids considerably in using the garden plows and cultivators, as they can thereby be run very close to the rows of plants, saving considerable work in weeding and hoeing. In any tolerably good garden soil a marker of this kind will make the drills plenty deep enough for sowing nearly all kinds of garden crops.

N. J. SHEPHERD.

BEST AGE OF SEED PEAS.

It is well-known that sound Peas, if kept in a dry place, will retain their vitality for five or six years, but recent experiments made by Maj. H. E. Alvord, at Houghton Farm, showed even more than this. They gave the interesting result that seed Peas two and three years old produced larger crops than those of the previous season. With Melons, Cucumbers, and other cucurbitaceous plants, it is generally accepted that seed a few years old is more productive than new seed, but with Peas the contrary has been supposed to be the case. The care and accuracy with which these experiments have been made, entitle them to special consideration, and it is to be hoped that this series of experiments will be continued long enough to unmistakably establish the facts in question. Major Alvord's article on this subject in THE AMERICAN GARDEN for May merits careful study.

FRESH SPROUTS.

Covering growing Onions lightly with soil is said to diminish their pungency, while it decreases the yield but little.

Taking all considerations together, no labor on the farm pays so well as that bestowed upon the family garden.

The Fruit Garden.

SEASONABLE HINTS.

If anyone doubts the beneficial influences of fruit growing, let him go now into sections where Strawberries are raised extensively, and he will learn that in almost every instance, fruit growing, from a small beginning, has spread and increased until not a home is to be found without its fruit garden. With the greater abundance of fruit, more and more is used at home, resulting in the better health, comfort and happiness of the consumers. Compare with this a rural home destitute of luscious fruits, fresh vegetables, and bright, sweet flowers; and the wide difference becomes apparent to even the most superficial observer. Refinement, intelligence, and morality are the natural concomitants of fruit culture and general horticultural development.

Raising Seedling Fruits is most fascinating employment, productive of a great deal of pleasure, and, sometimes, profit too.

Seedling Strawberries are easily raised. The most perfect berries should be selected for the purpose. They may be dried in the sun, and gently rubbed so as to separate all the seeds; or, when larger quantities are to be prepared, they may be washed out and strained. When dry, the seeds may be kept till the following spring, or till wanted. But a more satisfactory way is to mash the berries with enough fine, dry sand to make a dry mixture, and sow at once.

The soil should be light and friable, and the seeds covered not more than one-sixteenth to one-eighth of an inch. They may be sown in the open ground in some partly shaded situation where the young plants are to remain till the following spring, when they are to be transplanted in beds, like ordinary layer plants.

Professional growers prefer to sow the seed in boxes or pots, as in this way better care can be given to the young plants. Grown thus they generally become large enough for transplanting in early autumn. In either case the plants require careful protection during winter.

Other small fruit seedlings may be raised in the same manner, but the seeds, even when sown as soon as ripe,—which is the best time,—will not germinate before the following spring.

Transplanting Raspberries.—This year's sprouts may be transplanted now, by taking advantage of a damp, cloudy day. When the young shoots are about six inches high they are in the most favorable condition for taking them up. This should be done with a sharp spade, so as to preserve a good-sized lump of soil attached to the roots, with which they are to be transferred to their new position. With ordinary care all will live, and produce a crop of berries the following year.

Hardiness of Currants.—A friend living on Long Island told us the other day that all his Currants were winter-killed. This was a surprise, as it is the first time that we have known Currants to be injured by frost in this vicinity. We had always considered them as frost-proof as fence-posts; like the latter we have seen them thrown out of the ground by frost, but never killed outright.

FRUIT PACKAGES.

Suitable size, attractive form, and low cost of packages for marketing fruits, are considerations of more importance to the fruit grower than is generally supposed. In regard to the question whether a gift package is not preferable to a more costly one which has to be returned, there is considerable difference of opinion.

A few claim that the best, regardless of cost, is the cheapest, while the majority of growers prefer the cheaper packages, in consequence of which, competition among manufacturers of these packages has become so great, that the cost is nominal compared with former prices. When first made, the cost of a thirty-two quart berry crate was $2.50, while now one can be bought as low as 75 cts. each.

The original quart berry box invented in 1850 by Morris Cohen, of Washington Market, New York, for the shipping of wild Blackberries, was square with upright sides and cost about 6 cts. each. The introduction of the Beecher patterns was a great improvement on the former ones and cost one-half as much, but even then the cost was a great objection to many buyers, consequently when the American square basket with a substantial decrease in price was introduced, it became very popular, and this style of basket with the Delaware crate is now the leading berry package in the New York market.

For many years these packages were used exclusively for berries, and it is only lately that they are utilized for other fruits. Now these baskets are filled with large, fancy Currants, which meet with ready sale, as they require no handling by the retail dealers and are sold as received. Other growers take the small baskets out of the crates and replace them with larger ones, in which they pack Grapes, Cherries, Currants, etc., etc.

The original forty-pound Grape box was considered a model box, but as time passed, others were introduced, and in turn passed away. The ten and five-pound boxes, introduced by the Fairchilds, were packed in skeleton cases, and for a limited time were all that was desired, but soon the craving for smaller packages broke out, and they were discarded for the three-pound box. This met with an immense demand for years, when it became superseded by the five and ten-pound covered baskets, which are now the leading Grape packages in our market.

Among the recent introductions, is one known in Ulster County, N. Y., as the "Gift Grape Crate." It has a skeleton case containing six shallow baskets, with a platform to support the upper tier. For shipment to more distant cities than New York, where the packages cannot be returned, they are convenient enough, but I do not believe it profitable to ship them to our city.

These packages are well adapted for shipping Currants and Cherries in.

The old split Peach baskets, once so common, have been superseded by the "Stave" baskets, now generally used on account of their cheapness. They can be bought for 6 cents each, and this low cost has developed a desire among growers, as well as dealers, to do away with the custom of returning them to the shippers. There is so great a demand for Peaches from distant markets, that many shippers refuse to purchase them unless the baskets are sold with the fruit. Our local Pear growers are now shipping the bulk of their fruit in bushel boxes, of which there are two styles. One has a hinge lid with hook and eye at each end, while the top of the other is nailed on, but the bottoms of each are alike, having a narrow strip of about three inches in width, nailed on each side, with a center piece between. The whole is fastened with screws to enable the packer to fill the box quickly, neatly and compactly.

C. W. IDELL.

FLORIDA STRAWBERRIES.

When Florida Strawberries are offered in our Broadway fruit stores at two and three dollars per quart, and there are people able and willing to buy them at these prices, northern fruit growers who would consider ten cents a quart a good average price for their crops, will naturally look with longing eyes towards the land where such a golden harvest seems to await them. Yet, as "all that glitters is not gold," so Strawberry culture in Florida has its disappointments, and the following communication from E. Williams, who is an experienced fruit grower and remarkably keen observer, to the Philadelphia Press, throws more light on this subject than anything we have read before.

Early in February, on my way here, writes Mr. Williams from Indian River, Fla., I spent a few days with a friend near Ocala, in Marion County. He was very proud of his Strawberry plants, and entertained "great expectations" as to their future growth, multiplication and fruitfulness; but with few exceptions, his plants did not present to me any rosy prospect of an immediate crop. Most of the plants had but feeble vitality. They were set last fall and during a severe drought, and had had a hard time, but this summer he expected them to grow so he could enlarge his plantation.

Disappointed at my failure to discern a hopeful outlook, he took me to see a successful grower who had ten acres in fruiting this season. The farm of 800 acres—an old sugar plantation—is agreeably rolling for this country. From the buildings, on an elevated plateau, more of Florida can be seen at one glance than from any viewpoint I had yet attained. From this the ground slopes to the East, South and West, to a broad valley of heavier and moister soil, the drainage grounds of the more elevated portions of the farm. It is on these low bottom lands where the Strawberries are located.

We first saw about an acre planted in frames, so arranged that they could be covered with muslin in severe weather or cool nights, to protect them from untimely frosts. These plants looked well, were blooming and setting quite freely and gave better indications of success than anything I had yet seen. We sought the proprietor on a different portion of the farm, where he was engaged with a dozen hands in picking. The baskets were just being packed in refrigerator cases for shipment. The berries were fair in size, but, as I told the proprietor, they were hardly ripe enough. There were too many pale cheeks and white noses, to which he replied they carried better if picked close, and they would all color up by the time they reached the New York market.

"What do you expect to get for them?" I asked. By latest advices they were selling at $2.50 per quart; these will probably bring $2. Transportation to New York costs ten cents per quart, and when they sold as low as twenty-five cents, he did not propose to send any more, but dispose of them nearer home. The variety grown chiefly is the Neuman, as it seems to do better than any others which were being tried in a small way. He hoped, if they did well, to pick 20,000 quarts.

I should be glad to know that these expectations were realized. If so, and they were to net twenty-five cents per quart, it would amount to a snug little sum. Public statements of this kind generally look alluring, while the cost of the crop is often overlooked or left to the imagination. The cost of picking here is many times greater than any northern experience would lead one to consider necessary, for, instead of filling a basket at three or four sittings here, the picker had to wander over as many or more square rods to get the same quantity of ripe berries.

It is difficult for us northern berry growers to realize the changed conditions brought about by this climate. During the Strawberry season here, the temperature is moderately low and uniformly continuous, seldom reaching 80° or 90° from the flowering of the plants till the close of the season. If this condition of things existed with us our berry season would be much prolonged, but with our more rapidly increasing temperature, our berries are hurried into maturity, and there is crowded into three or four weeks what is accomplished here in two or three months.

To follow this shipment I took the address of the consignee in New York and wrote a friend there to look after them and report, which he did as follows: "The berries arrived in good condition, sound but rather green, and sold at 80 cents."

This rather diminishes the "great expectations" of prospective profits from the start. In further pursuit of information on this matter, I find that the failures are attributed to drouths and long summer — the plants burn up—and my conclusions are, that Strawberries will not grow everywhere, but by proper and judicious selection of location, in soil possessing sufficient moisture, tolerable success may be obtained. Nevertheless, the question of profit in its commercial aspect is an open one in the most favorable localities.

Grape-seed oil is used in Italy for purposes of illumination. The extraction is principally effected at Modena. It has also long been used for similar purposes in Germany and the Levant. Thirty-three pounds of seed yield about 13 quarts of oil (or about 18 per cent). The seeds of white Grapes yield less oil than those of the dark variety, and young vines are said to be more fruitful in this respect than older ones. As to the French varieties, the Rossillar, Aube, and Herault seeds yield 2 per cent more than Bordeaux seeds. The color is a golden-yellow, and the oil loses about 25 per cent in purification.—*Corps Gras Industriel.*

THE OHIO BLACKCAP.

With the increasing consumption of evaporated fruits of all kinds, there is springing up a large demand for varieties especially adapted for this purpose. The drying of Black Raspberries forms already an industry of considerable dimensions, and of all the many varieties in cultivation, none seem to combine so many desirable qualities for drying as the Ohio. It is of good size, firm, and enormously productive.

John H. Teats, of Wayne Co., N. Y., whose extensive experience in growing and evaporating fruit gives special value to his conclusions, says: "The Ohio with me surpasses in every respect any Black Raspberry I have ever grown. It has proved itself hardy, productive, and a strong and upright grower. The fruit is of good size and very firm; consequently ships well. It is of most excellent flavor. Of it I can raise at least one-fourth more quarts per acre than of any other variety. I had last year one acre on rather poor soil that yielded over 4,000 quarts." A yield that pays very well indeed.

THE OHIO BLACKCAP.

It requires from two and a half to three quarts of fresh berries to make a pound of dried fruit; and as the average selling price of evaporated Blackcaps is 30 cents per pound, the returns from such a plantation may readily be calculated.

The Strawberry crop of the Southwestern States is said to be a month later than usual.

What is not known about our native Grapes, Mr. T. V. Munson of Texas thinks, would fill a bigger volume than any yet published relating to what is known about them.

In preparing to plant Strawberries, take good land if you can get it; if not, take poor, and enrich it if you can. If you are planting for home use, be sure to plant on some kind of land; if you cannot get good, take poor, says Parker Earle, president of the American Horticultural Society.

SHORT CUTTINGS.

The importation of fruit at the port of New York is nearly $5,000,000 annually.

For all crops requiring an abundance of nitrogen, nitrate of soda is one of the best and cheapest fertilizers.

It is estimated that between fifteen and twenty million dollars' worth of seeds are sold annually in the United States.

The Worden is the Queen Grape of the Mississippi Valley, says Prof. Budd. It has gained a topmost place in the estimation of growers, solely by its own quiet, annual exhibit.

The duration of vitality in seeds depends very much on the manner in which they are kept. Trustworthy authority states a case in which Melons were raised from seed forty years old.

The difference in hardiness in Strawberries, says E. B. Underhill, depends more upon the position of their blossoms than anything else. If the blossoms look up they will be killed at 32°, if they look down they will endure 28° or less, according to shortness of stems and overlapping foliage.

Professor Maynard is of the opinion that with the use of chemical fertilizers, and the brush, grass and other material growing upon unimproved, stony land, much of it that *cannot* be cultivated may be made to produce paying crops of fruit, while the land that *can* be cultivated should be used for other purposes.

W. H. Hills of N. H. had a Benoni Apple-tree in soil so poor that it made neither wood nor fruit, to which he applied a peck of ashes in midsummer, and the next year it was overburdened with fruit, and made a foot of growth. This answers the question whether a soil needs potash or not, surer than anything else can.

A farmer in southern Connecticut, allured by the tree-peddlers' picture-book, a few years ago planted a large orchard of Russian Apples. Now he wishes he had planted Baldwins instead, and that the peddlers had never crossed the State line. He should have consulted State Pomologist Augur, to whose article in our April number he is respectfully referred.

Marshall P. Wilder, to whom belongs the credit of having first instituted a practical improvement in pomological nomenclature, proposes now to extend this movement to vegetables and flowers. We heartily second this undertaking, and sincerely wish that the venerable horticulturist's life may be spared long enough to carry it out, and thus build himself a living, immortal monument.

A Massachusetts correspondent is greatly pleased with the Willow Twig Apples this spring. They came through the winter in prime condition, with very little rotting, firm and of fine flavor and texture. A. R. Whitney of Illinois places it as only second in the list of profitable Apples with him.

The Flower Garden.

JUNE.

Come back, O June, to my heart!
I long for thy pure white Rose,
And the fresh green shelter apart,
Where the daintiest Fern-tip grows.

Come back with thy Poppies and Maize,
Let me lie in thy arms and dream;
In the languid delight of thy days,
In the smile of thy sunshine's gleam!

Come back, O June of my life!
Bring with thee the one dear face;
And my song shall leap forth with gladness rife,
Made richer by love's sweet grace.

Come back, O June of my love!
With the fragrance of Elder and vine—
My love that was pure like a dove,
And whose kisses were sweeter than wine!

Ah! never again that rich perfume
On my earthly sense shall rise,
Till I gather the Roses' crown of bloom
On the hills of paradise.

—*Continent.*

SEASONABLE HINTS.

We have frequently spoken of the impossibility of giving directions which shall be seasonable for all sections at the same time, and the following from an esteemed friend of THE AMERICAN GARDEN in Washington Territory, under the date of April 4th, well illustrates the fact:

"While the people in the Eastern States, and those who live many degrees of latitude south of us, during the month of March were suffering from heavy snow storms and severe cold, here on Puget Sound in the northwestern part of the United States we had as beautiful spring weather as one could wish for. Daisies, Pansies, Daffodils, Wallflowers, Tulips, Hyacinths, Gladiolus, etc., have been in bloom for some time. Shrubs of various kinds are donning their summer coat of green, while the grass has been growing since February, and active gardening has been in progress since the first of March and before."

June and Roses are not always insolubly combined, for no one need expect success with Roses without keeping constant watch for insects, and being promptly on hand to war against them at their first appearance.

The Green Fly, or Aphis, is a very common insect infesting Roses, but one which, fortunately, can be easily exterminated with Pyrethrum, "Buhach," or White Hellebore powder dusted over every part of the bushes when wet. Tobacco tea, made by boiling a quarter of a pound of Tobacco stems or common smoking Tobacco in a gallon of water for about ten minutes, and when cooled and strained, sprinkled or syringed over all the affected leaves and shoots, is also an excellent remedy. "Buhach" is very easy to use.

Rose Caterpillars may be kept in check with the same remedies, but nothing is nearly so effective as crushing them within the leaves which they glue together for shelter.

The Rose Bug is proof against most insecticides, and unless it appears in armies, which it does sometimes, hand picking is about the best safeguard. "Slug Shot" has been used by some of our readers with good results.

Red Spiders are more destructive in greenhouses than out of doors. Daily syringing with whale-oil soap is usually sufficient to destroy the pest.

THE ZEBRA GRASS.

Eulalia Japonica zebrina.

This is a very distinct and attractive hardy perennial, reed-like plant of robust growth, forming when well-established large clumps from five to seven feet in height. Its long, narrow, green leaves present alternate bands of green and creamy white of varying width, thus producing a most singular and attractive appearance.

The flowers, which are produced about the middle of September, are borne in panicles rising from the center of the stalk. At first these are of a brownish color with erect branches, and not at all showy, but as the flowers expand, the branches of the panicles turn over gracefully towards one side, thus bearing a strong resemblance to ostrich plumes. This plant resembles *Eulalia Japonica variegata* in form, habit, and manner of growth, but differs in being of more robust growth, and most essentially in the manner of its variegation, which runs crosswise instead of longitudinally, unlike other variegated plants. This feature gives it a very unique appearance, so that it cannot fail to attract the attention of the most care-

THE ZEBRA GRASS.

less observer, and always excites curiosity.

If the plumes are gathered when at their best, and are carefully dried, they will make desirable parlor ornaments. They last for many years, and when placed in a dry room, expand fully and present a most graceful appearance.

This plant is easily cultivated, and when well grown is specially valuable for subtropical work, although it is equally at home in the mixed flower border, or in groups, or as single specimens upon the lawn. It succeeds best in a well-enriched, loamy soil, and if at all possible, should be given copious waterings during seasons of drought. After the plant has become well-established it should receive a good dressing of well-decayed stable manure, dug in around it, in the spring, when the leaves should be cut back to the ground.

Propagation is effected by careful division of the roots in the spring, just before the plant starts into growth; but it is well to bear in mind that the plants make but little growth the first season. Frequent removals or divisions of the roots should therefore be avoided as much as possible.

This Eulalia is a native of Japan, where it was discovered by Thomas Hogg and by him introduced into cultivation. It was first offered for sale in the spring of 1877. As yet it has been little disseminated, but its merits are gradually becoming known, and I believe that ere long it is destined to form objects of graceful beauty, in the door-yard of the laboring man as well as in the most elaborate lawns and flower borders.

CHAS. E. PARNELL.

HOT-BED SASHES IN SUMMER.

As the warm weather approaches don't lay aside your hot-bed sashes as of no further use. Those who suppose that frames and sashes are only of use to protect plants from cold, have not yet fully learned the value of glass.

SUMMER TREATMENT OF VIOLETS.

Years ago I followed the then usual practice of dividing and planting my Violets in the open ground in April, to grow for planting in the frames in September and produce bloom in winter. In a favorable season the practice was reasonably successful, but usually the hot sun and the red spider made havoc among the stools.

About ten years ago I began the practice of cutting my Violets up into small pieces, with a bit of root, and potting them in three-inch pots. These pots were placed close together on a bed of coal ashes in a cold frame. A good coat of whitewash was applied to the sashes and they were placed over the plants, resting on strips laid lengthwise the frame at top and bottom, so as to leave an air space of an inch or two all around. A very moderate amount of attention with watering-can and syringe will keep the Violets green and flourishing all summer, and these potted plants, when planted in the frames in autumn, give the earliest and largest flowers. My florist friends used to laugh at me for keeping Violets in pots all summer, but one or two hot and dry seasons convinced them of the value of the practice, and now it is almost the general rule here in Maryland.

GLOXINIAS, ACHIMENES, BEGONIAS.

Another use which the amateur without a greenhouse can make of frames, is in growing Gloxinias and Achimenes under the shaded glass, in pots just as recommended for Violets. Gloxinias may be had in much better condition for the fall exhibitions by starting and growing them in frames, than they usually are in greenhouses.

Tuberous-rooted Begonias and many other plants do well in frames under shaded glass.

W. F. MASSEY.

PLANT SWEET FLOWERS.

A garden without a large quantity of fragrant flowers—such as Sweet Peas, Mignonette, Sweet Alyssum, Stock Gilies, Clove Pinks, Rose Geraniums—is not judiciously planted. These are the most desirable flowers for vases, bouquets, and many other uses that can be obtained.

The more brilliant bedding-out plants have been selected of late years for the adornment of the garden, such as Geraniums, Hibiscus, Fuchsias, Hollyhock, Chrysanthemums, Salvias, Verbenas, Asters, Balsams, etc., to the exclusion of the old-fashioned sweeter flowers of our grandmothers' gardens, but the exchange has not been a de-

sirable one. Therefore, let me beg of the readers of THE AMERICAN GARDEN, to purchase Sweet Peas, Mignonette, etc., by the ounce, and if there is not room for them in the formal garden or lawn, why, plant them in the vegetable garden, where they will bloom in odorous beauty, and feed all the bees in the neighborhood, while they will supply you with handfuls of sweets to wear at your belt, or buttonhole, with bowlfuls of flowers to decorate the breakfast table, all wet with the morning's dew, and with lovely vases to adorn your parlors, and basketfuls to send to your friends.

Oh, plant flowers, sweet flowers! and rejoice in their beauty and their fragrance, and let them fulfil their mission by uplifting your heart to the Giver of all good.

DAISY EYEBRIGHT.

A BEAUTIFUL VERBENA.

Nearly all our garden Verbenas, *Verbena hybrida*, were derived from the species *Melindres* and *teucrioides*, and so fixed has become their habit and character, that among the millions of seedlings raised every year there is but little difference except in the color of their flowers. Our illustration represents the new seedling "America," raised by Peter Henderson, which marks a decidedly new type, and promises to become the forerunner of an entirely new class of these charming bedding plants.

Among the thousands of seedling Verbenas that we have raised in the past twenty years, says Mr. Henderson, we have never produced one that equals this. The individual florets are larger than any variety of its color, being one inch in diameter. The trusses are three and a half inches across and of perfect form. The color is a striking shade of crimson scarlet with an immense white eye. An engraving, however good, can give but an indifferent idea of its grand appearance.

VERBENA AMERICA.

AMARANTHUS.

Years ago we used to see a rather coarse-growing plant in most country gardens, bearing long, drooping, tassel-like racemes of small flowers of a dark, blood-red color. This plant was called "Prince's Feather." It did not attract much attention then, for few tried to produce "startling" effect in the flower-garden. But of late, since large masses of color have been "the fashion," rather than individual beauty, this plant has received more attention, and is being quite extensively used. For this purpose it is extremely valuable. The foliage is, in almost all varieties, quite as striking as the flowers, being of a dark, rich crimson or maroon.

To insure the best results, the soil should not be made very rich. In a moderately good soil the plants are more compact and of a better color. For large beds, or a hedge, this plant is very effective. It should, however, on account of its rather coarse habit, be kept in the background, where only its general effect can be seen.

A. salicifolius grows to the height of three feet. It has long, narrow foliage, of dull green tipped with maroon. As it assumes a pyramidal form, and the leaves droop gracefully, it is a good plant for the center of a bed.

Sunrise is probably the most brilliant variety of all, as to foliage, the leaves on the extremity of the branches being a shining crimson, reminding one, at a little distance, quite forcibly of the Poinsettia.

Tricolor has red, yellow, and green foliage. In this variety, the foliage is of greater width than in any other I have ever grown, and the effect is therefore more solid and massive than it is where the narrow-leaved kinds are used. The flowers are not produced until quite late in the season.

Last season I used the Amaranthus as the principal plant in a hedge, with Nasturtiums in the front row. The contrast between the dark foliage of the former and the rich green of the latter, with its bright flowers, produced a fine effect. For beds near the house, *A. salicifolius* is to be preferred, as it has less of the coarseness peculiar to this class of plants than any other variety. For broad effects of color, Sunrise is the best of all the varieties of this showy class of plants. E. E. R.

STERNBERGIA LUTEA.

One of the prettiest of fall-blooming flowers, and one of the most uncommon, is the Golden Crocus-like Amaryllis, *Sternbergia* (*Amaryllis*) *lutea*. It is a good companion flower to the Colchicum and makes a pleasing variety in color. The bulbs should be planted late in spring or in early summer. They remain dormant so far as visible growth is concerned until early autumn, when the handsome, dark-green foliage appears, followed quickly by a profusion of golden flowers. The foliage retains its beauty all through the winter and gradually ripens off as the warm weather comes in spring, and the plant goes into its summer rest. The bulbs may be allowed to remain from year to year in the same place by covering them during the winter, and will make large clumps. A good location for them is beneath clumps of shrubbery where nothing else is planted, or among the beds of Lily of the Valley, where they vary the season and make the border more attractive in fall.

AMPELOPSIS VEITCHII.

This is of late years becoming a common and popular plant for covering walls, and its beauty is unquestionable. Few people, however, know how much more rapidly and effectively it can be grown from seed than from cuttings. A seedling plant will get nearly as far over a wall in one year as a cutting will in two. If you have a wall you wish to cover with Ampelopsis, get the seeds in autumn if you can, but spring will do, and sow them in a nicely prepared border along the wall where you wish them to climb. The seeds germinate readily and the young plants take to the wall at once, and soon get complete possession of it.

PLANTING GLADIOLUS.

Don't plant them all at once. Plant a few about the first of June, more about the middle, and some in the last week of this or first of next month, and, in this way, weather permitting, you will have flowers till the end of October. Plant in rows and very thickly, say two to three inches apart in the row. Brenchleyensis is one of the cheapest, brightest and most useful varieties of a beautiful genus.

OUR FLOWER BASKET.

The annual Chrysanthemums are worthy of a trial in every garden. For a corsage bunch nothing is more appropriate.

Five cents' worth of *Phlox Drummondii* seed will, if given decent treatment, produce a wealth of brilliantly-colored flowers all through the summer.

For a shady spot, under trees and shrubs where the soil is rich and not too dry, there is nothing more satisfactory than Lily of the Valley. To plant it once is to have it forever in the garden.

In the latitude of New York it is not safe to turn out tender bedding-plants before the last week of May, or better still, the first of June. Last year frost killed many Coleus on the 30th of May.

The Dwarf Flowering Almond is one of the prettiest little shrubs in cultivation, and deserves a place in every garden. As it flowers on the young shoots it should be cut back severely after flowering.

For the protection of single plants against slugs there is nothing safer than to sprinkle a ring of salt around them. A slug can no more cross it than a man could swim through an ocean of fire.

Our hot, dry summers are not as congenial to the English Daisy as the damp atmosphere of Europe, but it may be grown successfully in frames during winter, and early in spring transplanted to an open border as a most appropriate companion to Pansies.

The Window Garden

AND GREENHOUSE.

THE WINDOW GARDEN FOR JUNE.

House-cleaning is in order or finished, the windows are emptied of their plants, and what pot-plants we now have are plunged out-of-doors, or set on a stand on the piazza or in some other suitable slightly shady nook. Plants now are far better off when outside than inside. But be careful and see to it that they are properly arranged so far as their taste for shade or sunshine is concerned.

WATERING PLANTS.

In dry weather plants want water. If they are in pots they must get it whenever they need it, and that, too, in unstinted measure. In bright sunshine do not water them overhead, but in the evening or late in the afternoon a sprinkling overhead is good for them. The afternoon or evening is the preferable time for a general watering. Plants that are set out in the garden, also flower-garden stock, should not be watered daily, even in very dry weather.

Before they begin to suffer for want of water, give them a thorough soaking, and the next morning rake or otherwise unfasten the surface of the soil to prevent undue evaporation and the surface from baking. Don't deal in dribblings but see to it that the watering you give is enough to soak through to the deepest root. One such watering is enough to last for several days. Frequent waterings are injurious to out-door plants.

MULCHING AND CULTIVATING.

By keeping our beds and borders clean, and thoroughly and frequently cultivated during the summer months, we much reduce the need of watering, and this is easily done by means of draw or scuffle hoes, long-tined iron rakes, or where the plants are set closely, by the little five-tined "Excelsior" hand-weeders.

Mulching, too, is of very great benefit. In the case of flower-beds, tidy borders containing small plants, or plats filled with Violets, Carnations, Bouvardias, and other winter-stock, short stable-manure is about the best thing to use. Half-rotted tree-leaves are hard to get, besides, they rot quickly; lawn-mowings, if dried before applied, are chaffy and apt to be blown about, and if used green will become a thick, close mat. But almost anything is better than nothing.

For trees, shrubs, and strong-growing plants generally, leaves sprinkled over with thatch to keep them in place, salt hay, lawn-mowings, or any handy littery material is serviceable.

INSECTS.

Thrips are very destructive to Camellias, Azaleas, Amaryllises, Crinums and bulbous plants generally; the "twitter" to Carnations, burying itself in the growing points; the red spider delights in the warm, dry weather, and spreads alarmingly over trees and herbs and hardy and tender plants; the mealy bug prefers the greenhouse or window to the open air, and in summer chooses the roots and lower portions of the plants, rather than the flower-buds and growing points; scales abound on the old wood, and the young aphides may multiply exceedingly, especially in late summer and fall; and we have an army of caterpillar pests, bugs and beetles, and all want attending to.

PYRETHRUM POWDER

In the form of Persian, Dalmatian or Buhach, if fresh and pure, puffed into the faces of the aphides, will make them quit their hold and drop dead or intoxicated to the ground. Mixed with water, and in this way sprayed on caterpillars, Rose-bugs and some other insects, some experimentors claim that it will kill the pests, but my experiments have been much less successful.

TOBACCO-WATER

As dark-colored as very strong tea, is destructive to aphides, thrips and "twitter," but harmless to scales, red spiders and mealy bugs. Tobacco stems, commonly known as "factory trash," may be obtained at a cent a pound at any cigar manufactory. Half fill a pail with stems and fill up over them with boiling water. A pint or quart of this liquid in a can of water will be about right. Tobacco stems spread under the plants, either out-of-doors or in the house, are effectual in keeping off thrips and aphides.

KEROSENE EMULSION,

So far as my experience extends, is one of the best insecticides; it will kill anything that has a soft skin. I first make it in the form of butter, but if the workman is lazy, I only get a very thick paste.

My recipe is simple enough: Take a measure—say two quarts—of skimmed milk, put it into a vessel on the fire, add a piece of soap—about a quarter of a pound or more—paced into thin slices so that it may dissolve quickly, and stir till the soap is dissolved and the milk gets pretty warm, then pour into a pail and add an equal quantity of kerosene, and now with a coarse syringe work the mixture as vigorously as possible till you get butter, or it becomes so thick that it won't pass through the syringe, which usually happens in 15 to 20 minutes.

In using I dissolve some of this butter in a can of water and apply with a syringe. As a preventive, a pint of butter in an eight-quart can of water; as a cure,—for the hard-wooded plants as Camellias, Crotons, Allamandas, one-fifth of kerosene; for hard and mature leaves as of Ficus, Carnations, and Dracaenas, one-eighth; for young leaves and growths, about one-tenth.

But cultivators should experiment and determine for themselves. In the case of small plants in pots, or others that are planted out, and where I would be likely to waste considerable of the emulsion were I to apply it with a syringe, I wet the plants with a big sponge.

CHRYSANTHEMUMS.

Grow them planted out rather than in pots. Keep them well pinched in till the end of June, when, after that time, it may be well to let them grow. If plants are scarce, "strike" the points you pinch off; they will bloom nicely in the fall no matter how small they are. Put one stout stake to each plant and tie the leading stems to it, but leave the laterals untied. Water copiously.

POLYANTHUSES

And other hardy Primroses in frames will be out of bloom now and the better for a little shade. If now in a sunny place, lift and plant them thickly in rows on the north side of a close fence, hedge, or building, there to remain over summer. But do not under any circumstances divide them now; let that operation alone till the plants start again to grow in fall, then lift, divide, and replant them in frames for blooming next spring.

If you have not any Polyanthuses, sow some seeds now, and grow the young plants in a cool, half-shady place, and enjoy a treat next April and May. WM. FALCONER.

PLANTS FOR SHADY WINDOWS.

Having a north window from which the outlook was not very pleasant, I determined to fill it with plants. For this purpose I selected such kinds as I thought most likely to do well in almost complete shade. These were *Aspidistra variegata*, *Curculigo recurvata*, *Dracæna indivisa* and *Seaforthia elegans*, of the Palm family, with an English Ivy to clamber up and about the window frame. I purposely omitted all flowering plants. My selection has been very satisfactory during the winter. The plants have grown well, and though there was no bright color to relieve the green of the foliage, the effect was cheerful and suggestive of summer.

ASPIDISTRA VARIEGATA.

The Aspidistra has leaves like the Lily of the Valley in shape, only a great deal larger. They are striped with light and dark green, and occasionally with clear white. Each leaf is thrown up from the roots. The leaves are very thick and firm in texture, and seem to be everlasting. They are very easily kept clean by the use of a cloth or sponge. There is little danger of doing any damage to them by handling them. This is my second experience with this plant in shade, and I am convinced that it is one of the best ones we have for north windows, or any other location deprived of sunshine. On account of the thick texture of the leaves it is able to withstand the dry air and dust of our living-rooms better than almost any other plant I am acquainted with.

CURCULIGO RECURVATA.

This plant has long leaves, deeply ribbed or plaited their whole length, with a pure white stripe in the center. These leaves have a graceful curve, and as they are quite freely produced, a well-grown plant is very ornamental. Like the Aspidistra, it is firm in texture and little affected by heat or dust.

A GOOD PALM.

The Seaforthia made a fine center for the group, its long, much-divided leaves curving outward gracefully over the others. This is one of the best Palms for house culture. It is not only more attractive in its habit of growth than *Latania Borbonica*, which is more frequently seen, but it is more effective when young, because of the length of its leaves with their fine curve. It is entirely devoid of the stiff appearance peculiar to the other variety.

A GREENERY.

A good show of greenery is much more satisfactory than a window full of sickly plants, from which we vainly try to coax flowers under circumstances which are unfavorable to such results. I would confine my selection of plants for shady windows entirely to such kinds as have good foliage for whose development sunshine is not at all necessary. If this is done, and no flowers are expected, there will be no disappointment.

Lycopodium planted in each pot grew vigorously, and in a short time the soil was covered with its pretty green. A frequent sprinkling kept it fresh and healthy.

E. E. REXFORD.

BOUGAINVILLEAS.

Bougainvillea glabra and *spectabilis*, the best known representatives of this interesting genus of tropical shrubs, are at present extensively used for parlor decorations. They are remarkable for their beautiful, brilliant, rose-colored bracts, and few plants at our floral exhibitions attract more admiring attention. The following directions, from the London Garden, are given in answer to some inquiries about their culture.

The Bougainvillea is one of the best plants we have for decorative purposes, for, if well-managed in the first stages of its growth, it will flower freely in a small state. Young plants of it are easily obtained in spring when the old plants are pruned back, after being rested during winter. Procure then as many cuttings as may be required for one season; take them off with a heel of firm wood attached to them, as cuttings of that kind root quicker and are more to be relied upon, than when taken off the points of very long shoots.

The soil used for the cutting pots, should consist of sifted peat, leaf mould a third, and a small portion of loam, adding about one-half of the whole bulk of sharp, silver sand. Mix well together, fill the pots and place a thin layer of sand upon the top of the soil, firming it well. Dibble the cuttings round the sides, and place the pots in a propagating pit, or hot-bed, in which there is a steady bottom heat, and a top temperature ranging from 60° to 70°. Under such conditions the cuttings will root in a few days. The young plants should then be potted off singly into three-inch pots, using the same compost as before, but not so much sand. After potting, replace the plants in the same temperature as before, until they get established in the fresh soil, when they may be removed into a temperature of about 50°. Thus treated the wood will be firm, short-jointed, and probably healthy. When the shoots have made four leaves, pinch their tops; they will then form good specimens. Shift once more during the summer when thoroughly well-rooted. Six-inch pots will be sufficiently large for the first season, and if well treated, a few sprays of bloom will be produced during autumn.

Attend well to the watering, and endeavor to promote growth until the end of September or beginning of October, when water should be gradually withheld until all the leaves fall off. After that, just give sufficient to keep the wood of the plants from shrivelling. Keep them in this state until February or early March, when they should be again started into growth. When a good supply of bloom is required for several months, the plants should be started at intervals of three or four weeks.

Shift them into larger pots as soon as they commence to grow. Some prefer to give them a shift into larger pots as soon as pruned in the autumn, but spring-potting is preferable. Use good, filmy peat and yellow loam in the proportion of three of the former to two of the latter, and a fair proportion of sharp sand to keep the whole open. By this treatment good specimens may be had the third year.

THE WILLIAM FRANCIS BENNETT ROSE.

THE BENNETT ROSE.

No other Rose has ever made so much of a sensation as the William Francis Bennett. It was raised by the celebrated English Rose-grower, Henry Bennett, from Adam, or President, crossed with Xavier Olibo. It will be recollected that a part of the stock was bought by Charles E. Evans, of Philadelphia, for seven hundred and fifty pounds sterling, under the restriction that no plants should be sold before 1887. Mr. Evans has since secured the balance of the stock from Mr. Bennett. The restriction has now been removed, however, and plants are offered for sale in several catalogues.

Its color is a beautiful, glowing crimson, a shade lighter than General Jacqueminot, nearly approaching it in intensity; in delightful fragrance it equals La France. It quickly responds to judicious pruning, and is one of the most persistent winter-bloomers in existence. Its growth is remarkably vigorous and its foliage healthy, resembling that of the hybrid remontants. We have seen this Rose frequently at our exhibitions, and the oftener we see it the more do we become convinced of its beauty and excellent qualities.

OUR WINDOW BOX.

Mr. DeWitt S. Smith, Lee, Mass., who has one of the largest collections of Orchids in the United States, has a *Dendrobium nobile* on which 500 blossoms were counted the other day. How the bees would like that!

A little known but most beautiful annual is the Salpiglossis. It is only half-hardy and should therefore not be sown out doors before settled warm weather, or it may be started in the hot-bed and transplanted afterwards. The flowers are funnel-shaped, generally dark purple and delicately veined, blooming in autumn.

Lawn and Landscape.

BACKGROUND FOR LAWNS.

A good background is an essential feature to a perfect lawn. No matter how tastefully the lawn proper is arranged and planted, it has a bleak, unprotected appearance, when lacking a warm background of natural color. When the vision can wander through and over the lawn, and to a wide expanse of earth and sky beyond, it gives one the impression of a tiny grass-plot or play-ground, even if it be quite extensive and varied in arrangement. If there be bright colors on the lawn, they cannot be brought out satisfactorily without an immediate background of agreeable character. A landscape is like a painting: it must have a suitable background in order to bring out clearly the beauties of color and design that are placed in the foreground.

There is nothing more appropriate for this purpose than a body of rich, dark evergreens of good, generous size. A dwarfed, scrubby tree is of no use in such a place. It is simply an aggravation to the eye, and does not in the least answer the purpose for which it was intended. What is wanted is a thick belt or grove of evergreens that will attain a growth of at least 15 or 20 feet. It is not a matter of very grave importance, if the tops are irregular, and the forms of the trees a little varied. We all like to see a lawn kept well-trimmed and regular, while a background of Nature's own handicraft cannot shock the most fastidious.

There is nothing more attractive and suggestive of repose to the pleasure-seeker than a cosy corner of the lawn, formed by a boundary grove of evergreens. While it may be so arranged as not to shut off from the house desirable views into the surrounding country, it serves at the same time to concentrate the observer's attention on the lawn, something as the hood of the stereoscope concentrates the gaze on the photograph under observation.

Those who have not given the matter close observation, can hardly imagine what a warm, bright effect, flowering shrubs produce when viewed against a background of dark green. The harmony of color and contrast is most beautiful and pleasing. It not only lends an additional charm to the lawn in summer, but preserves the grounds from that bleak, deserted aspect, which winter usually brings. In fact, a very cheering effect may be produced, even in midwinter, with the aid of such a background, by planting in the lawn such shrubs as bear bright-colored berries that remain on all the winter. With good taste and ingenuity, a pleasing design of color may be produced in this way, to soften and enliven the monotonous aspect of winter.

Such a background as I have referred to may also be considered profitable in point of utility. It serves as a windbreak for the whole premises, and especially screens the small lawn-shrubs from the trying winds. It prevents blowing and drifting of snow, that so often proves fatal to lawns by leaving the grass roots exposed to sun and frost alternately. A lawn surrounded or partially surrounded by a belt of evergreen will start much earlier in spring, than one that has an open, bleak exposure.

In many sections of the Eastern, Middle, and Northern States, evergreens suitable for this purpose may be taken directly from the forest, and transplanted with no more expense than that of the time devoted to the work. Those who have not access to the trees in a wild state, can easily procure them from the best nurseries at moderate prices. If bought at the nursery, only the hardy varieties that have been thoroughly tested, should be selected. Where they are to be massed together in this way, the common white Pine is as suitable as any. It is a rapid grower, and very hardy. Some of the Spruce are also quite hardy, and rather more attractive than the Pine.

W. D. BOYNTON.

POETRY IN TREE-PLANTING.

"I have written many verses," said Dr. Oliver Wendell Holmes, "but the poems I have produced are the trees I planted on the hill-side which overlooked the broad meadows, scalloped and rounded at their edges by loops of the sinuous Housatonic. Nature finds rhymes for them in the recurring measures of the seasons; winter strips them of their ornaments and gives them, as it were, in prose translation, and summer reclothes them in all the splendid phrases of their leafy language. What are these Maples and Beeches and Birches, but odes and idyls and madrigals? What are these Pines and Firs and Spruces but holy hymns, too solemn for the many-hued raiment of their gay deciduous neighbors?

"It is enough to know that when we plant a tree we are doing what we can to make our planet a more wholesome and a happier dwelling-place for those who come after us, if not for ourselves. As you drop the seed, as you plant the sapling, your left hand hardly knows what your right hand is doing. But Nature knows, and in due time the Power that sees and works in secret will reward you openly. You have been warned against hiding your talent in a napkin; but if your talent takes the shape of a Maple-key or an acorn, and your napkin is a shred of the apron that covers 'the lap of earth,' you may hide it there unblamed, and when you render in your account you will find that your deposit has been drawing compound interest all the time."

A BIT OF NATURE.

Behind the great barn and the grape-arbor, and between the field-road and the adjacent cultivated land, there lies a tract of about 100 feet square which has not been plowed for 20 years or more. What grass grows upon it is taken off once a year in the month of July, and being near the big barn doors, the chance to cultivate is not good, from the constant going in and out at some seasons of the year.

This spot has become very attractive to the children. Here they gather the blue Eyebrights, the yellow Dandelions, the Violets, blue and white; the Buttercups and Daisies, the Red and White Clover; the wild Strawberries, the Crane's-bill and Lobelia, and innumerable other wild flowers. Ferns Golden-rod and Daisies later in the season. The variety is so great and so pleasing, that I take as much pleasure in seeing and gathering them, as do the children themselves, to whom they are a constant surprise and pleasure. They make Dandelion chains, and Daisy and Clover necklaces, Violet mats, and Burdock ornaments; gather wild Strawberries, and have a general good time in the not over-tall or rank grass, which they can wander in at will to pick the treasures which they so much prize.

The whole plot is out of sight, in one sense, but yet is very near the home, and after being mowed, is chosen as a playground for croquet, ball, hoop, and other games, as the surface is quite smooth and level. I do not know of another such a bit of undisturbed nature in the midst of cultivated grounds on all sides; and although I could easily transform it into a model lawn, or a profitable garden, still I do not regret its neglect, nor do I believe that this piece of ground could in any other way produce more genuine and pure enjoyment than it does in its natural wildness.

W. H. BULL.

THE NEW PARKS FOR NEW YORK AND BOSTON.

In "A Plea for Picturesque Gardening," Mr. Roger Riordan, in Outing for May, writes as follows concerning the new parks for New York and Boston:—

There are comparatively few disagreeable objects to be removed; and the fact that a view of the sea, in each case, enters into the scheme, adds immensely to these advantages. Nothing more is necessary, to begin with, than the opening of a few additional roads and paths, the placing of a few seats, the erection of a few shelters. Whatever else may properly be added should be a work of time,—should be thoughtfully considered, and slowly and carefully executed. Above all, no such mistake should be made as was recently committed in the laying out of the Riverside park, in New York, where, with a fool's economy, grounds were passed by that might have been added, and which, a few years ago, were more beautiful than any spot included, and the money which might buy them was spent, and is still being spent, in wholly unnecessary grading and sodding and planting, or, rather, in paying voters for pretending to do such work. Now, it is, I believe, proposed to pass by the grounds at High Bridge, the most desirable anywhere within 50 miles of New York. In another year or two they will, probably, be ruined beyond redemption by beer-gardens and groggeries; yet the only charge that they need ever be to the city would be the stationing of a couple of policemen there.

In the proposed new parks, if the artists could have their way, few changes would be made from the present disposition of the soil. It is mostly pasture-land, with small woods, plantations, streams, and ponds, and here and there some tillage. Nothing can be more generally pleasing than scenes where fields, verdant with growing vegetables or corn, or red from the plow, alternate with rocks and woodland. No trimmed and decorated landscape can be more interesting. A denizen of a great city, we may be sure, will more enjoy the sight of a field of Potatoes in blossom, than that of a hot-house full of blooming Century-plants; and the landscape-painter, too, will heartily agree with the citizens' love of nature.

Foreign Gardening.

THE MUSHROOM INDUSTRY IN THE SUBURBS OF PARIS.

The growing of Mushrooms, an industry as yet little developed in this country, assumes vast proportions in the neighborhood of the French Metropolis. Whether the Parisian epicures have an especial weakness for this most delicious of vegetables, whether their gardeners are more enterprising and skillful than those of our cities, or whether the immense abandoned stone quarries in the vicinity of Paris offer unusually favorable conditions for Mushroom growing, does not appear. The fact, however, is not to be disputed, that the environs of this great city produce more Mushrooms than those of any other city of which we have knowledge. Her subterranean caverns cannot solve the whole mystery, for large quantities are produced above ground, and in private gardens thrifty beds of this delicacy may often be seen growing in tubs, boxes, or even upon simple wide boards lying upon the ground.

When we are told that the average daily production of the Paris Mushroom growers amounts to 25 tons, we may begin to realize something of the importance of the business. Of course this vast amount is not all consumed by the Parisians. On the contrary, a large proportion is preserved in various ways, for shipment to other cities and countries, and in many of the far inland towns of our own country we may purchase French Mushrooms at the better class of grocery stores at fancy prices.

The manner in which the greater part of these Mushrooms is produced, is full of interest. They are largely grown at a depth varying from 20 to 150 feet below the outside world. The only external marks of the points where this lucrative business is being carried on, are the long banks of stable manure, piled for fermentation and manipulation among the huge piles of white stone rubbish that are always found about the shafts of the quarries. The manure, gathered from the city, is collected into long piles where it is frequently pitched over to avoid violent fermentation. When the straw of which it is composed has lost its consistency, so that it is soft and unctuous to the touch, and has a brown color, it is lowered through the narrow shafts into the dark caverns, wherein the gloomy, tortuous passages, it is formed into long, narrow beds, preparatory to the reception of the spawn.

To one accustomed to gardening in the open air, the multitudinous difficulties of this subterraneous culture must seem well nigh intolerable. The sunlight, of course, never penetrates the winding caverns, and all labor must be performed by artificial light. Now the jutting rocks above hang so low that one must stoop to avoid relentless bumps; now the rugged walls stand so close that one can only pass by walking sidewise; even where the limits of the somber passages are such as to afford abundant room, the omnipresent beds often lie so close together that the visitor fears lest a stumble in the half-relieved darkness should pitch him headlong upon them. Nevertheless, amid these dark and echoing dungeons many busy hands find employment and livelihood.

Exhausted beds are removed, and new ones are arranged every day in the year. The manure, after having been carried to the proper stage of decomposition in the open air, is laid up in beds about 20 inches wide, and of equal height, the top being rounded somewhat. The beds are of various lengths dependent upon the space within the chamber. They are "spawned" by inserting bits of manure from a bed already permeated with the mycelia of the Mushroom. After inserting the spawn, the beds are covered with about an inch of soil, composed of three parts of the white sifted rubbish of the quarry, and one part fine, dry earth. In a few days after the spawning, the small Mushrooms or "buttons" begin to appear, and are fit for gathering in a day or two longer. The duration of the crop varies from forty days to three months after the first Mushrooms are fit for use, the length of time depending upon the height of the roof of the caverns, the season of the year, the method of culture, etc. The grower must practice much skill and vigilance, or his work may go for naught. The watering of the beds is an operation which requires much care, and in some quarries the water has to be carried long distances and lowered into the quarries in barrels. The ventilation of the caverns must also be attended to, as the decomposition of so much manure generates gases that would, if confined, soon become fatal both to Mushroom and human life. Then, as in our open air gardens, there are insects and mildews to be guarded against. All in all, we think the Mushroom grower should be well paid, as he generally is, for the markets are always hungry for his delicate wares.

The Mushroom caves are under government supervision, and are regularly inspected. They are owned by private individuals, and are generally leased to the Mushroom growers, the rentals varying from $30 to $80 per month, according to the extent and height of the galleries, the facilities of ventilation, etc. "ELM."

JAPANESE WINDOW GARDENING.

Among the Japanese the love of flowers and plants is an absorbing passion. In the smallest of dwellings there is an altar-like niche in or upon which flowering plants are arranged, but they have in some districts a most remarkable custom in connection with window gardening.

In houses wherein reside one or more daughters of a marriageable age, an empty flower-pot of an ornamental character is encircled by a ring, and suspended from the window or verandah by three light chains.

Now the Juliets of Japan are of course attractive, and their Romeos as love-sick as those of other lands. But instead of serenades by moonlight and other delicate ways of making an impression, it is etiquette for the Japanese lover to approach the dwelling of his lady, bearing some choice plant in his hand, which he boldly, but, let us hope reverently, proceeds to plant in the empty vase. This takes place at a time when he is fully assured that both mother and daughter are at home, and I need scarcely say neither of them are at all conscious that the young man is taking such a liberty with the flower-pot outside of their window. It is believed that a young lover so engaged has never been seen by his lady or her mamma in this act of sacrilege; at any rate a friend tells me that during his long residence in Japan he never heard of anyone being detected in the act, or interfered with in any way.

The fact is, this act of placing a pretty plant into the empty flower-pot, is equivalent to a formal proposal to the young lady who dwells within. The youthful gardener having settled his plant to his mind, retires, and the lady is free to act as she pleases.

If he is the right man, she takes every care of his gift, waters it, and tends it carefully with her own hands, that all the world may see and know that the donor is accepted as a suitor. But if he is not a favorite, or if stern parents object, the plant is removed from the vase, and the next morning finds it withered on the verandah, or on the path below. In a word, if you are not the right man, it is evident that this phase of window gardening must be a difficult and disappointing one to carry on in Japan.—*From an address by F. W. Burbridge.*

ISLAND OF BARBADOES.

Barbadoes is quite a contrast to the other tropical islands from the absence of mountainous character, comparatively speaking, the gentleness of its slopes, and the extent of its cultivated area; there is scarcely any waste land, and as with an area of 162 square miles, it has 162,000 inhabitants, it is necessary to cultivate it pretty thoroughly to maintain them all. We enjoy the island, nevertheless, very much; the drives over the splendid coral roads, almost as smooth as the asphalt pavement, in the cool of the morning and evening, are delightful, and the temperature of the sea water is just right for bathing.

The old-fashioned windmills, with their huge, solid stone towers and four long arms, are quite quaint, and the groups of the Cabbage (Royal) Palm at every plantation, towering high above everything else, give an air of novelty as well as beauty to the stranger from the North.

Numerous fields are to be seen of the Eddoes, or edible Caladiums grown for food, and of the Guinea Corn, which is an edible grain. [Probably a sorghum.]

The private gardens are flaming with large Poinsettias, beautiful variegated Caladiums, Crotons, Coleus, and other foliage plants. Even the little negro huts have plots in front with choice varieties of Coleus and Crotons growing therein.

Trees of the Frangipanni, with its deliciously scented flowers of white or rose color; the Ceiba tree, or Silk Cotton, with its dense light-green foliage, and massive trunk with its singular buttresses thrown out high above the roots; the Bearded Fig-tree, from which the island is said to have obtained its name, given by the Spaniards, *barbados*, bearded, from its roots hanging down from the branches, like a beard, and sometimes striking root and growing into stems, like the Banyan; the *Ficus nitida*, Garden Mangrove, with its exceedingly dense, dark-green foliage, spreading sometimes to a diameter of 100 feet, all have their interest to one having any botanical taste.—*J. F. Flagg, in Vick's Magazine.*

Exhibitions & Societies.

NEW YORK HORTICULTURAL SOCIETY.

Among the many beautiful plants and flowers shown at the May meeting of this society, the most noteworthy were the magnificent Geraniums and Pelargoniums from Hallock & Thorpe, comprising several entirely new shades of color. The same firm exhibited also a large collection of Carnations, several Orchids and other plants.

John Farrell, gardener to Wm. Barr, excelled himself. His exhibits filled an entire table. He makes a specialty of Cinerarias and Calceolarias, and his success with them was evident from the very excellent specimens shown. Two large, Staghorn Ferns attracted much attention, and a number of Chrysanthemums in bloom looked odd enough at this season.

Wm. C. Clement, gardener to Mrs. M. G. Morgan, took, as usual, the palm for Orchids, and all the specimens shown were remarkably well grown. Specially noteworthy were *Dendrobium Parishii*, *D. Cambridgeanum*, *Odontoglossum pescatorei*, *O. Roezlii album*, *Cattleya Schilleriana*, *Epidendrum Wallisii*, *Cypripedium niveum*, *C. superciliare*, *C. barbatum*, *C. Warneri*, *C. marmorophyllum*, *Oncidium Marshalli*, *O. concolor*, *Angræcum sesquipedale*, this latter one of the finest specimens in the country. About a dozen magnificent specimens of *Lælia majalis* and *Cattleya citrina* were shown by James Taplin.

Wm. Bennett made a grand display of Anthuriums. A single plant of *A. Wardii* with a dozen flowers, was an exhibition in itself; this was sold after the meeting for $100. The same exhibitor had a dozen of *Cypripedium niveum* in pots, *C. Lawrencianum*, a superb specimen of *Dracæna Lindenii*, *Asparagus plumosus*, *Clerodendron Balfourii*.

Albert Benz gloried in Pansies, of which he made a most attractive and tastefully arranged exhibit. A single flower measured nearly three inches in diameter. In Lilies of the Valley he was equally successful.

W. C. Wilson made a varied exhibition, comprising Orchids, Lilies of the Valley, Hyacinths, Polyanthuses, etc.

John Henderson's Roses were as usual of unsurpassed excellence, and formed a principal center of attraction.

In cut flowers, Chas. E. Parnell took all honors, his exhibit being one of the most varied and meritorious of the kind ever placed upon the tables of the society.

Vegetables and fruits were rather meagerly represented, the best being plates of Black Hamburg and Bowood Muscat Grapes, the latter bunches being 12 inches long. These were from Reuben Powell, gardener to Chas. Butler of Fox Meadow Gardens.

AMERICAN NURSERYMEN'S ASSOCIATION.

The tenth annual meeting of this society will be held at Chicago from June 17th to 20th, and is expected to be one of the most interesting gatherings of the kind that ever took place. The influence and usefulness of this association are extending with every year, and its meetings are not only of great business value to its members and those in the trade, but highly enjoyable as well. Among the objects sought by the association are: The cultivation of personal acquaintance with others engaged in the trade. The exchange and sale of nursery products, implements and labor-saving devices. The exhibition and introduction of new varieties of fruits, trees, plants, etc. The perfection of better methods of culture, grading, packing and sale of stock. To procure quicker transit, more reasonable rates, and avoiding needless exposure of nursery products when in transit. To avoid the evils of dishonest tree agents, etc., etc.

Circulars, conditions of membership, and other information may be obtained from D. Wilmot Scott, Secretary, Galena, Ill.

MARYLAND HORTICULTURAL SOCIETY.

The beautiful concert room in the Academy of Music was thronged with visitors to the April Exhibition of the Maryland Horticultural Society. The show could not be called a large one as to the number of exhibits, but average excellence of the plants shown largely atoned for the small number of exhibitors.

The most conspicuous table, both in size and excellence of the plants, was that of Mr. Donald Grant, the skillful and intelligent gardener to Mr. T. Harrison Garrett. Mr. Grant had some remarkably fine Azaleas for so late in the season, and also a fine lot of stove and greenhouse plants. His Orchids were one of the chief attractions, and were not only fine specimens of culture, but were magnificently bloomed. We noticed *Dendrobium Thyrsiflorum*, *D. chrysotoxum superbum*, *D. Cambridgeanum*; *Cattleya speciosissima*, *intermedia*, *Skinnerii*, *Forbesii*, and *Wagnerii*; *Cypripedium candatum*, *Lawrencianum*, and *barbatum*; *Saccolabium curvifolium*; *Odontoglossum Roezlii*; *Oncidium Weltonii*, *Aspasia epidendroides*; *Lycaste Harrisonii*; *Maxillaria Tetracornia*, *Cœlogyne Parishii* and *Cyrtopodium Andersonii*.

Mr. E. Hoen showed some remarkable fine Azaleas which took the first premium, a plant in bloom of the curious Indian Lilac and well bloomed plants of *Dendrobium Pierardii latifolia*; *Cattleya Mossiæ* and *Epidendrum Parkinsonii*.

From the City Conservatory at Patterson Park, Mr. Archibald Anderson, superintendent, sent a choice collection of greenhouse plants and a handsome lot of Remontant Roses in pots, clean, healthy plants, and well bloomed.

Among the professionals, Mr. Charles Hamilton, of Waverly, had a choice lot of seedling Amaryllis which were very much admired. Mr. H. is making a specialty of Amaryllis, and his seedlings are equal to any of the high-priced sorts from abroad.

Samuel Feast & Son (J. E. Feast), the veteran house in the trade, have had a small but well grown exhibit, including a fine collection of Ferns, a very beautiful hanging basket entirely filled with the feathery *Asparagus tenuissimus*, some handsome Palms of moderate size, and two splendid specimens of Marechal Niel Rose in pots. These were fully seven feet high, well trained, and loaded with flowers, and attracted a great deal of attention.

Mr. Jno. Dun had some handsome show Pelargoniums, fine Verbenas and Pansies. Mr. Jno. Müller had a table filled with well grown Fuchsias. Mr. Green, the active manager of Richard Cromwell's Nurseries, had a table of Zonal Geraniums, which was gorgeous with bloom of many hues, on well grown plants.

The cut flower tables were conspicuous for the almost entire absence of the prominent florists who usually make a gorgeous display. Only one design, a very handsome one by Miss Patterson of Waverly, was shown. Mr. Pentland had some fine Pansies and a box of Camellia flowers, which were remarkably good for so late in the season.

It is to be regretted that the florists generally seem inclined to hold aloof from the society, which has in the past done a great deal of good to the cause of horticulture, and is capable of doing much more if properly conducted. HORTICOLA.

AMERICAN INSTITUTE FARMERS' CLUB.

From the first of May the Institute has secured for its future home a part of Clinton Hall, where commodious offices, library, and meeting room are now being fitted up. The Farmers' Club has therefore adjourned until these will be ready. The inaugural meeting in the new hall will be held in connection with the proposed Strawberry and Rose Exhibition. All those interested or intending to exhibit, may obtain circulars and premium lists by addressing the secretary, Mr. D. R. Garden, American Institute, New York City.

SUBTERRANEAN IRRIGATION.

An elaborate address on a new system of irrigation and drainage combined was delivered by Hon. A. N. Cole of Wellsville, N. Y., at a recent meeting.

The system which is more specially adapted for sloping surfaces consists in the main in making a number of horizontal trenches or reservoirs, and connecting them by drain tiles.

"Beginning on the lower side of the plot to be irrigated, or the side on which drainage can best be secured from," said Mr. Cole, "a trench is sunk through the surface soil, and into the sub-soil three or more feet in depth and the same in width. One or more rods from this trench, and parallel with it, another is sunk in the same way. Connecting the two is then made an overflow trench just far enough below the surface to escape the tools used in working the ground, and the bottom of which shall not come within two and one-half feet or more of the bottom of the large trenches. (Drain pipe of any kind may be used for these connections.) The main trenches are then filled with large stones, placed in such a way as to leave all the water space possible, to the top of the sub-soil.

"Over these are then put the small stone taken from the soil, and over these, leaves, straw or cut weeds. This is done for the purpose of keeping the soil from washing down into the trenches. This covering should be brought up to within about 12 inches or more of the original surface of the ground. Over this replace the surface soil again. Construct and connect in this way trenches enough to cover the plot. From your first or lowest trench construct an outlet or overflow drain which shall carry off all the overflow of the systems.

"Your system is now complete, and ready for action, which is as follows. With the melting of the snows of spring and the

heavy spring rains the trenches fill, thus storing beneath the surface of your ground, hundreds of barrels of water ready for use when necessary. As long as there is sufficient moisture in the soil, this water is undisturbed, but as soon as the soil becomes dry, and the growing vegetation requires water, nature sets at work her pumps, natural absorption of the soil, solar evaporation, and capillary attraction, and draws towards the surface and to the roots of the growing vegetation, the stored waters, furnishing at all times the moisture necessary to bring to perfect development of growth or fruitage the crops upon the ground."

The results which are said to have been produced under this system are astounding, and seem to fully warrant the necessary expenditure. A committee was appointed to visit Mr. Cole's place during the growing season, and it is with considerable interest that we look for the committee's report.

ARGENTINE RURAL EXHIBITION.

With the coöperation of the Government of the Argentine Republic, and that of the Province of Buenos Ayres, the Argentine Rural Society will hold in the city of Buenos Ayres an International Rural Exhibition, to commence the 25th of April, 1886. The Premium list is divided into over 400 classes, comprising every kind of agricultural and horticultural products. No other South American state offers so inviting a field for the extension of our commerce as the Argentine Republic, and it is very desirable that the products and manufactures of the United States be fully and creditably represented at this exhibition.

FLORICULTURE AT NEW ORLEANS.

As a whole, the floricultural part of the New Orleans exhibition cannot be said to have been a success, although some of the exhibits were highly interesting and valuable. Fortunately the natural beauty of the grounds, studded with innumerable Oaks, shading the grounds with their far-spreading, low-hanging, moss-clad branches, produced a most charming scenic effect, unaided by human art.

By far the most prominent floral feature during the spring months, was the magnificent display of spring-flowering bulbs, or Dutch bulbs,—as they are popularly called,—made by the General Bulb Company of Holland through their American representative, Mr. J. A. De Veer of New York, and under the immediate charge of Mr. William H. Boomkamp. In extent, beauty, tasteful arrangement and intrinsic merit, this exhibit was certainly never equalled in our country. It would require a book to name and describe all the species and varieties comprised in it. There were 110 varieties of Hyacinths, 136 of Tulips, 50 of Crocus, and Narcissus, Ranunculus, Anemones, etc., in proportion. Of course they were awarded all the first-class prizes, including that for the best general exhibit to occupy not less than 10,000 square feet of ground, a gold medal, four silver medals and $400.

An immense crescent-shaped bed of Pansies, representing every possible shade, from the most delicate tints to nearly black, produced a brilliant effect and was greatly admired. This was made by J. Nelson, of New Orleans, who had also a large collection of *Phlox Drummondii.*

Most visitors from the North were here before all these beauties were in bloom, and therefore took home with them the impression that there were no flowers here, but those who saw the grounds when the Dutch bulbs were at their best, thought that to behold this glorious sight was alone worth the journey.

NEW ORLEANS.

AMERICAN SEED TRADE ASSOCIATION.

The third annual meeting of this association will be held in Rochester, N. Y., from June 9th to 11th. The organization was formed for the mutual benefit of all those engaged in raising and selling seeds, to promote better acquaintanceship between its members, and to devise means and measures to facilitate trade and friendly relations between its members. A very large and interesting meeting is anticipated, and seedsmen who are not already members, will find it to their advantage to have their names enrolled. All information in relation to this may be obtained from the secretary, James Y. Murkland, 18 Cortlandt St., New York.

AGRICULTURAL CONVENTION AT WASHINGTON.

Col. Colman, the Commissioner of Agriculture, invites all agricultural colleges and experiment stations to send one or more delegates each, to a convention to be held at the Agricultural Department building in Washington. The meeting will begin at 10 A. M., June 24th.

OF THE EARTH, EARTHY.

From the sanitarian's standpoint, one might well say, "Let me build the cellars for the people and I care not who rears the superstructures." The latter may be badly ventilated, imperfectly lighted and insufficiently warmed; they may be hot in Summer, cold in Winter, leaky as to their roofs and shaky as to their floors, but if the cellars are what cellars ought to be, clean, open, dry, light and airy, the most serious danger will be avoided. Of course much depends upon location, but even under the most favorable circumstances the exhalations from the earth enclosed by the foundation walls constitute an unknown element, and whether actively poisonous or apparently harmless, it is certain that the ground atmosphere is not well adapted to human consumption till it has been rectified by the sun and other purifying influences that belong above ground.

When the doors and windows of a house are closed for several weeks or months, especially if sunlight is also excluded, the rooms are almost sure to be found pervaded with a musty, sepulchral odor, even though the building is entirely empty, apparently dry and free from all symptoms of dust and decay. It smells of the earth, earthy, and for the simple reason that the particular bit of the earth's surface upon which it stands has been breathing into the house all the time, and its breath, like all expired air, is liable to be impure. If the house had been placed a few feet above the surface of the ground upon posts, leaving a clean, open sweep for the air underneath it, the rooms would be no more vitiated than a hang-bird's nest or an empty corn-crib. Opening all the cellar windows would be partially effective to the same end, but not fully so, because the wind does not always blow with sufficient force to keep the air of the cellar from rising through the loose floors that are commonly laid directly above the cellar in dwelling-houses.

There are two points, then, of great importance in the building of cellars. One, that the floor of the cellar, not the walls merely or chiefly, for that is not so essential, but the *floors* should be made by the use of cement and asphaltum as impervious to air and moisture as possible. The other, that the cellar should be amply ventilated at all times. It is not enough to say that, since we do not live in the cellar, it is therefore of small consequence what the quality of the air may be, for, whether we perceive it or not, the atmosphere in the rooms above an unclean cellar is sure to be more or less contaminated from below, for in Winter and in Summer its constant tendency is to rise. Board floors and wool carpets will no more keep these evil elements in subjection than stone vaults and brazen doors will keep down a troubled ghost that is bent on rising. Once admitted to the cellar, they will climb through the rooms above unless coaxed or driven out into the open air.—*The Builder.*

ARRANGEMENT OF ROSES.

Taste in the arrangement of flowers is fortunately not subject to unanimity of sentiment, else we should soon be wearied with a continual sameness, nevertheless there are certain fixed laws that regulate the decorative art in flowers. In regard to these, J. H. Bourn said, at a recent meeting of the Massachusetts Horticultural Society:

"Too many blooms are used for single baskets and bouquets, where they are crowded together promiscuously, exhibiting a mass of petals, the form and color of each separate flower being indistinct, with little of its own foliage to render the proper effect. The more nearly Roses are shown as they naturally grow, the handsomer they are. The stiff artificial stem, without the leaf of the flower, propped up by Smilax, Ferns, and other green things than its own foliage, is not Nature.

"Hand bouquets of Roses and buds are more beautiful when made of one variety with its own foliage, stems long and loosely bunched, having a small number, well chosen, of sweet odor.

"A collection in basket form or for parlor decoration had better lack a flower than have one too many, the object being to form a graceful, refreshing and suggestive picture, preserving an 'easy negligence mixed with art.' Show each bloom separately, reposing in its own green, and a few colors have a better effect than many. If a combination is thought to be desirable, red, white and buff form a pleasing one. The beauty of Roses is much enhanced in masses.

"As a rule, if there are to be many flowers, use the delicate shades; if few, the deeper tones. Large, choice Roses are always more effective when displayed in proper standards for their reception as single specimens."

Reports of local fruit and flower shows, and of general horticultural exhibitions, will be acceptable to THE AMERICAN GARDEN from any of our readers in any part of the world.

Rural Life.

GIRLS IN THE GARDEN.

If there is anything more conducive to the health of girls and young women than some regular, systematic, light garden work we should like to know what it is; surely it is not to be found in the drug store. Thousands of frail, listless, pale-faced girls to whom the world seems a burden, could transform themselves into healthy, happy, joyful beings, by this simple remedy. We offer it without charge, if you will only try it.

Commence some pleasant, cool morning, after breakfast, not before, until you are considerably stronger—by making a small flower-bed, sowing a few seeds, planting some bedding plants, or tying up a climbing Rose or a Honeysuckle. Make it your regular business every day to spend an hour in your garden, watching and caring for your plants. It does not matter how small the beginning is. In fact, the less you undertake at first, provided you do it well, the better will be your success. The main point to secure is to create an interest in your work, and this cannot be accomplished if you overwork yourself and become discouraged at the start. To be promotive of good the work must be a pleasure, not hardship.

HORTICULTURAL ADORNMENT.

Near all our large cities there are many small or moderate-sized homes belonging to that highly-respected class of the community who are yet engaged in active business in the cities, and who have become possessed of a small tract of land in the country. It may be from a love of rural surroundings and an attachment for country life formed in boyhood, or from a desire to obtain more relaxation for themselves and surround their families with that abundance of fresh air, pure water and the facilities for healthful enjoyment not to be obtained in a city home. This class, whatever may have been the motives which have prompted them, is very numerous and rapidly increasing.

The owners of these homes are generally inclined to immediately commence to adorn their possessions, but are frequently ignorant of how to do this, though theoretically they may be well informed in book knowledge and catalogue literature. They come to the country with an ardor and desire to partake of its comforts, luxuries and enjoyments. They purchase their cow and chickens and expect from them to derive at once all the benefits of an abundance of milk, butter and eggs. They then look to the nursery man to supply them with trees that will bear fruit the first season without fail and continuously during their natural lives. They have one acre or more of land, and usually expect from this all the products of a place ten times the size, and frequently, as a consequence, their trees, plants and vines are set out so close together that the results from none of them are satisfactory.

'Twere well for all when planting out an orchard or garden to consult the tables laid down by long experience as to the proper distances for planting. I admit to many the distance may seem unnecessary at the time, but rest assured that if the trees grow and thrive as they should under good cultivation they will eventually produce better results than if twice the number were planted.

Our city farmer, having planted his fruit-trees, desires the further adornment of his rural home, especially so if his dwelling has been built on a new site and lacks protection from the summer's sun or winter's blast. He secures, most likely, the largest trees that can be transplanted and places them unnaturally close to his residence, and thinks it strange he cannot stretch his hammock beneath their luxuriant shade the first summer. This planting of trees so near a dwelling as to prevent the free circulation of air around it is an error. It is the shadow, not the branches, that should strike the house.

Again, it is not necessary that a tree should be excessively large when moved to make a quick and abundant shade. A fine, thrifty, healthy tree, of moderate growth, in nine cases out of ten, will in five years give more shade and become a finer tree than the excessively large one.

An additional ornamentation of these homes with flowering shrubs and evergreen trees, judiciously interspersed, and fencing the lawn with an evergreen hedge of American Arbor Vitæ or Hemlock Spruce, will do much to beautify and adorn them both in summer and in winter. For what can be more ornamental in summer than the contrast between a beautifully kept greensward and a clump of handsome flowering shrubs; or in winter the dark foliage of evergreens in contrast with the snowy canopy of mother earth?

But there is another class of country residents that, I fear, is not so fully convinced of the desirability and advantages of the embellishment of their rural homes. Many of our farmers consider any outlay in this direction rather as an extravagance; they do not realize the effects of making home attractive in this way, and the influence it may exert on the younger members of the family. They may have provided an abundance of Grape-vines and small fruits, and an inexhaustible supply of orchard fruits, thinking in doing this they had done all that was necessary to make home attractive and comfortable. But not so, according to the injunction,—"These ought ye to have done and not have left the other undone."

The expenditure of a small amount of money in the purchase of ornamental trees, shrubs, Roses and climbing plants, and their proper arrangement, so as to produce the needful shade and at the same time to hide any unsightly objects from view, will well repay for the investment.

Many farmers look upon ground devoted to a lawn or yard as little better than wasted, and feel that they can ill afford to set aside half an acre or more around their dwelling, in which they may in all probability spend the remainder of their lives. They count the loss thus sustained by the number of bushels of Corn, Oats or Potatoes that said land would yield annually. But too often I fear these same farmers neglect to count the land wasted in improvised rockeries, covered with Dewberry and Poison Vines, unsightly fence corners or hedges of Sumac and Elder that in all probability infest their farms. Have your yard and dispense with these unsightly objects, and your farm will be quite as profitable and far more attractive.

There is something pleasant about a rural home that has been laid out and planted with some degree of taste and propriety. Though the buildings may be nothing more than ordinary, yet if there has been an appropriate interspersing of evergreens and deciduous trees in a manner that will break the winter's blasts from coming with undiminished violence against the dwelling, and a further adornment by shrubbery and hedges, there is something about such a home that will exert an influence on the younger generation, and may be the means of causing them to form a preference for a country life instead of seeking their fortunes in the large cities.

Surely the remunerative prices these farms with attractive farm buildings and pleasant surroundings bring when placed on the market should be an incentive to try to make our own so. When we couple with this the satisfaction there is in having one's lot cast in pleasant places, and one's family gathered around, as it were, beneath one's own Vine and Fig tree, there is that indescribable satisfaction and happiness which cannot be measured by mere dollars and cents, but will go very far toward compensating for the outlay necessary for the "Horticultural Adornment of our Rural Homes."
—*W. H. Moon before the Penn. Hort. Society.*

COUNTRY JOYS.

Every industrious and healthy person, even if he begins life with nothing and secures a small yearly surplus from his earnings (and discards all worse than useless luxuries miscalled such), says John J. Thomas, may secure for himself a pleasant and comfortable place of his own.

I once counted within the contracted enclosure of a friend living in a compact part of New York city, no less than forty species of ornamental plants, besides his Currants, Raspberries, and Grapes. But the country resident has greater opportunity than this, and a much wider field for working. It is here that influential horticulturists may exert an immense benefit in the way of adding to the enjoyment and happiness of others by promoting such improvements. They can show how practicable it is to obtain a supply of fruits the year through, and the beauties and benefits of ornamental planting.

The horticulturist has, within his own grounds, the opportunities for constant intellectual enjoyment. The pleasure afforded by the labors of propagation, planting, pruning, and culture—in watching the swelling buds of spring, the bursting blossoms and the development of the various fruits of summer—the grandeur of nature's foliage, and the magnificence of the wide landscape with its clouds and skies, these enjoyments cannot be obtained by those who spend all their time and every thought in bending down to the earth in making money. I do not say that the culture of fruit and flowers can completely fill the measure of happiness in this present life, nor supply what Christianity alone can give, which stands, in its influence, above all else, like an edifice of glory, perfect in form and radiance; but horticulture may continue its spotless column with wreaths of beauty, and thus become an invaluable aid in benefiting the human race. It is here that nurserymen and florists have before them a noble and sublime mission in exalting rural art.

Miscellaneous.

JUNE FLOWER STYLES.

The wild-flower craze began in May and is not over yet. In favorable weather parties of young people make trips to the woods in the suburbs of New York, to gather the blossoms, and whatever is pretty in the way of foliage. The most charming baskets of wild growth are brought back, and the ferns and vines and "tangled creepers" are lovelier than any foliage now offered in the flower-stores. Violets, Marsh Marigolds, Hepatica and Arbutus were gathered in May, and now the name is Legion of the tender blossoms gathered in wood, field, meadow, by the wayside, and among the salt grasses of New Jersey marshes.

GARDEN PARTIES.

June garden parties are the favorite entertainment at this season. The *Fête Champêtre* is enjoyed far better than any party given in-doors. Floral decorations have been on an extensive scale, arches, pagodas, and covered ways being wreathed and thatched with flowers. The blossoms of shrubs and the large Peonies now in flower have been used in these elaborate arrangements, being more effective than Roses which drop their petals so soon at this time of year.

Hanging-baskets swung on trees have been employed, and brackets of growing plants, ingeniously fastened to rustic summer-houses, have added much grace to the lawn-party decorations. A very handsome floral display was made in a Staten Island garden last week. It was rumored that some large blossoms massed on the top of an archway were tissue paper. They looked so natural that no one could tell if they were counterfeit, and they were too high up to examine closely.

DAISY DINNERS AND PANSY LUNCHEONS

Have been fashionable with young ladies entertaining friends about departing for Europe. The prevailing style is to have the favors, which are usually bouquets de corsage, placed in large silver or glass bowls along the center of the table, where they can be admired during the feast, and distributed after it.

STEAMER FASHIONS.

The floral souvenirs for friends departing on the steamships are very elegant, several new and rich designs having been made that are expressive and suitable for the occasion. Hand-satchels of light straw are almost covered on the sides with clusters of Moss Rose-buds, and are filled with bunches of Forget-me-nots, the bag being left half-way open. A tin piece fitting in the bottom of the bag contains wet moss, in which the stems of the flowers are plunged.

The display of flowers on the steamers leaving the port of New York has been magnificent this season. Baskets containing superb long stem Roses, panels of spring blossoms to hang in the stateroom, floral ships, and pyramids of flowering bulbs have been among these tokens of remembrance. On several occasions the florist has had orders for the entire decoration of a stateroom. This is done in a very pretty fashion, and is a delightful surprise to the person about to sail. Curtains of smilax, or *Asparagus tenuissimus*, are draped before the berths, which are caught back with ribbons. Lilies, Roses, and Forget-me-nots are distributed over the washstand and wherever there is a convenient place. Handsome decorations of Immortelles have been made in the stateroom.

A beautiful idea has been successfully carried out by friends of those accustomed to having fresh flowers daily. A certain number of corsage bunches are placed each in a separate box and put on ice in the great refrigerator of the ship. These are dated, and are to be daily presented to the lady who has been so kindly considered by the friend left behind.

There is a mistaken impression concerning flowers taken to sea: many persons believe these are cast overboard as soon as the vessel is outside Sandy Hook. This is not so. Flowers left in the saloon are watered faithfully by the stewards, and are placed on the table each day at dinner. The cool, moist air of the ocean seems to act as a preservative, and frequently, flowers are taken off the ship at Liverpool in a fair condition.

JUNE WEDDINGS.

A delightful style has just been introduced for June weddings. The bride carries a two-handled, soft-straw basket, which is entirely covered on one side with Niphetos buds and Maiden Hair Ferns; the other side is covered with pink Roses. Going into church she exposes the white flowers, and after the ceremony, when coming from the altar, the pink Roses are displayed.

Very large straw hats, the kind known as "Bloomer hats," are in vogue for bridesmaid's bouquets. These hats are caught together at the rim by satin ribbons, and are filled with Roses and trailing foliage. For a wedding last week, six bridesmaids carried these hats full of Roses, each hat containing flowers of a different tint, swung on their arms with satin ribbons. There were two little girls who were the "maids of honor." They carried Leghorn hats filled with Daisies on their arms, and wore Daisy wreaths on their heads.

FLOWER APRONS.

Small aprons of flowers are novel favors presented at June entertainments. These are exceedingly pretty for German favors at lawn parties. A florist made 30 of these aprons lately, for a garden party given at Yonkers. The foundation was surah silk of delicate tint, upon which the flowers were so neatly caught that the stitches did not show. A pink silk apron which had a border of the Mignonette Polyanthus Rose around it, and bretelles or "wings" covered with sprays of these fairy, blush Roses, was a dainty garment. A blue silk apron was fringed with Corn-flowers, *Centaurea cyanus*, and a lavender silk one was exquisitely festooned with Heliotrope.

SUNDAY FLOWERS.

There is a large trade in cut flowers Sundays in New York, supplying ladies on their way to church with a corsage bunch of flowers, and gentlemen with a boutonnière. Flowers are ordered regularly for a number of New York churches every Sabbath. These are usually arranged on and around the pulpit, blooming plants being included in several of these weekly decorations.

In a number of the Sunday Schools, flowers and plants are distributed. The nosegays are given instead of tickets of merit to the children who are punctual, and a plant is presented now and then to those who are regularly in their place. This floral distribution in the Sabbath School is not an expensive item, as the large plant-growers sell very reasonably to supply this demand, and are very generous with cut flowers for the Sunday presentations.

WATER LILIES.

Water Lilies are a favorite flower for street-wear this month. As many as a dozen, including the green, polished buds, are worn at the belt, the long, sedgy stems being left to fall below the waist. For a boating party given on Silver Lake, Staten Island, last week, the ladies all wore Pond Lilies on their hats and on the corsage. It is quite fashionable to pin a cluster on the sun-umbrella. They are effective wherever placed.

City florists are making elaborate preparations to supply the leading watering-place hotels with handsome flowers. We shall give a full account next month of flowers at Newport, Long Branch, and Saratoga.

FLORA.

TRANSPLANTING NUT TREES.

Transplanting nut-bearing trees, both naturally and nursery grown, is generally considered a decidedly hazardous undertaking. When properly treated, however, there need be but little risk.

That nut-bearing trees are difficult to transplant when nursery grown, is not for a moment believed anywhere in Europe, says Prof. J. L. Budd, in the Iowa Homestead. All that is needed is to transplant when young, or to cut the tap roots, as is done in the old nurseries with the ornamental Oaks and other deep-rooting trees. In all Europe, nut-bearing trees are as common in well-managed nurseries as fruit trees. Where grown systematically in nursery, the best varieties of the Black Walnut, Butternut and Shell-bark Hickory should be selected, and varieties of the Filbert equal to the best found in the market might be common in all the south part of Iowa. Nor is it necessary to be confined to our native trees.

In Poland, Hungary, Silesia, and even south Russia, as far north as Kiev, are grown abundant crops of *Juglans regia* (English Walnut). The nuts of these northern varieties of this choice species, can be imported cheaply in any quantity. All it needs is an enterprising nurseryman to set the ball in motion. In the southern counties of the State, several varieties of the Pecan would also prove hardy in sheltered positions on the loess formations and perhaps on any dry soil on the open prairie.

THE FOUR ESSENTIALS OF A HOUSE.

In planning a house, says the author of Farm Homes, let four essential points be kept in view: Drainage, Sunlight, Ventilation, and a Bath-room. These features can be compassed even in the smallest cottage, and yet thousands of farm-houses are being completed to-day without a thought of them. It is cheering to reflect, however, that other thousands of farm-houses are going up wherein these vital considerations have been kept first and foremost. Progress in building-reform is unnecessarily slow, especially in the newer States, and wives and daughters should set themselves to thinking and studying about these things, and to hasten on the millennium of right living.

AMONG THE FLORISTS.

AT FLORAL.

Mr. John Lewis Childs was very happy in the choice of the name, Floral, which he induced Uncle Sam to give his post office, and happily successful in getting the post office established, in spite of considerable opposition. He is doing a thriving business, and his large mail trade demanded this convenience. Nowhere have we seen a more complete and business-like system for packing and shipping plants and seeds. Under it, error seems hardly possible, and labor and time are reduced to a minimum. Mr. Childs believes in having large stocks of a few of the best and most popular varieties and a few novelties. By this means his attention is not divided, and he is enabled to devote his time largely to pushing the sales, which he has so far done with marked success.

AT QUEENS.

Messrs. Hallock & Thorpe were in the rush of spring trade when I stepped into their office last March, and their faces showed the satisfied and expectant look of men reaping the results of a year of hard preparatory work. Mr. Thorpe escorted me among his pets with all the pride of a true lover of his work. He lingered lovingly among his Carnations, than which there are few if any finer collections, and which Mr. Thorpe has done so much to improve. He predicted that they will run the Rose hard for popularity within two years. Some of the new sorts, not yet introduced, will have only to show their healthy, beautiful faces to win favor in the sight of the fair. Messrs. H. & T. have had great success with the Swanley White Violet, having sold 2,000 blossoms a week through the season. Their collection of Chrysanthemums is one of the first in the world, both in size and quality, and includes 69 new, and 479 old sorts. They sold 15,000 plants during the season.

The new *Azalea amœna* is hybrid in the species and very showy. *A. imbricata* is quite new and distinct, and desirable. Among the new Primroses was seen the Gilbert's Harbinger, of the Polyantha or "fancy" type.

Their new Geraniums seem as popular as ever, and are having a decided run. Since our previous visit in 1883, their houses had increased in number by three or four, and their facilities for trade in like proportion. Fortune smiles upon these gentlemen for the good work they are doing.

AT BRATTLEBORO, VT.

Mr. C. E. Allen began business in 1868, a lad of 17, borrowing a little land of his father as a beginning. This land was paid for long ago, and above 20 acres besides, and recently he has added 17 acres more. Seven acres are in Strawberries, and several acres in nursery for small fruits and hardy plants. He has seven or eight good houses, where he grows a large assortment of fine plants. His Pelargoniums in May made a fine show and were a large collection. His Geraniums were a fine lot of most of the best sorts. In one house was a perennial bank of Heliotrope (Chieftain and Peruvianum) against a wall. The plants made a mass three and a half to four feet high, were healthy and full of flowers, and furnished a constant supply for cutting. The stocks throughout were in fine condition, and showed the reason for Mr. A.'s growing trade.

ANSWERS TO CORRESPONDENTS.

Grass Pink. *G. B., Omaha, Neb.*—The Grass or Garden Pink is perfectly hardy, but in a northern climate it will be much benefited by a winter mulch. To keep them in good condition they should be renewed every year by cuttings or layers. The latter mode is the easiest in a small way, and the best time for layering is just after the bloom is over. When rooted, the layers have to be detached and transplanted. A mellow loam well enriched with decomposed stable manure is the best soil for them.

Lily of the Valley. *B. H. W., Adrian, Mich.*—Sometimes a bed of Lilies of the Valley will last forever, but mostly the plants become so crowded that after about six years they lose their vigor and should be thinned out. This is best done by digging out alternate strips of about one foot wide through the bed, and filling in the space with soil and manure.

Celeriac. *Reader, Ohio.*—This was described in a recent number. It is a variety of Celery with enlarged root. The cultivation is the same as that of the ordinary Celery, except that it is not hilled up. The root, which is of irregular, globular shape, and of the size of garden Beets, is used in soups and principally as salad.

Planting Strawberries in June.—A subscriber residing in New York says: "On account of building an addition to my house, the ground where I intend to make a Strawberry bed will not be ready before June; will it do to plant so late in the season?" If the plants are in the same garden they may be transplanted at any time by taking up sufficient soil with them, but if they have to be procured from a distance, planting in June is not to be recommended. Better bring the ground in as good a condition as possible, and procure potted plants in July or August; they will give a better yield next year than old plants set out now.

Marechal Niel Rose again. *S. C. P., Laprairie, Canada.*—The article referred to treats on Rose-growing in *England*, which has so different a climate from our own that English methods cannot always be followed here. We have never seen a thrifty, blooming Marechal Niel Rose grown in a living-room, yet if the conditions which prove successful in the greenhouse can be provided in a window as well, there is no reason why similar results should not be produced. The principal points to be observed are to keep the plants in good growing condition till about September, then withhold water so as not to induce new growth, but not so much as to make the plant wilt. After the first sharp frost the pots are to be taken up, a few inches of the top soil removed and replaced with decomposed cow manure and loam. All branches should then be closely pruned and the plants placed in a temperature of 45° to 50° by night, and 65° to 70° by day, and if demanded for forcing, gradually raising the temperature from 75° to 80° by day and 55° by night.

OUR BOOK TABLE.

Summit County, Ohio, Horticultural Society. Report of meetings. President, Dr. M. Jewett; Secretary, M. Crawford.

The Tobacco Remedy, by Gen. T. L. Clingman. Orange Judd Company, New York, publishers. A large array of cases showing the efficacy of the external application of Tobacco as an antispasmodic and in many cases of local inflammation.

New Jersey State Horticultural Society. Proceedings of the annual meeting held at Trenton, Dec. 29 and 30, 1881. This society, which counts among its members many of the most prominent horticulturists in the land, is doing a vast amount of good in developing and promoting the horticultural interests of its State. Its meetings are always well attended and the reports thereof are of permanent value. The present volume contains, in addition to the officer's addresses and reports, many highly interesting papers, among them: Strawberries, by J. B. Rogers, mention of which is made on another page of this number; Peach Culture, by Ralph Ege, J. D. Cole, and R. D. Cole; Horticulture, by James Tuplin and Thos. Edwards; Adornment of Public Grounds, by C. W. Idell; The Pleasure of Flowers, by John Thorpe; Peach Yellows, by Prof. S. T. Maynard; reports on the Comparative Earliness and Yield of Potatoes, by E. Williams, T. F. Barker, J. B. Rogers and N. W. Purcell. An especially valuable feature of this report is the fruit list of the State, compiled by J. T. Lovett. With it one may learn at a glance the degree of adaptation and value of all the leading varieties of fruits grown in each county.

Orange and Fruit Culture, by Charles V. Mapes, New York.—The widely varying effects of different fertilizers upon the quality of Grapes, Strawberries and various tree fruits, as well as upon the vigor and health of the plants and trees, are well known to careful observers. The Orange, however, has only so recently come under extensive cultivation in our country, that comparatively little study has been given to its special needs. Mr. C. V. Mapes, who has probably given more attention to this subject than any other chemist or fruit grower, has some time since collected and sifted all the information about the Orange culture obtainable, and this, together with the results of his own experiments and conclusions, is embodied in this interesting pamphlet. It would be difficult to crowd more solid, practical information into an equal number of pages, although the author modestly states in his introductory remarks that, "They are intended more to invite further investigations and discussion than to afford a definite solution of the question," and he cordially invites cooperation and correspondence with experimenters and others interested in solving special problems in Orange and Fruit Fertilization.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

Joseph Breck & Sons report a large trade in Strawberry plants.

C. E. Allen of Brattleboro, Vt., is well pleased with his season's trade, which is fully a third greater than last year.

V. H. Hallock, Son & Thorpe have had so large a plant trade, that they were far behind their orders through most of the short shipping season.

A. Brackenridge, Govanstown, Md., is having a good trade. He believes in advertising judiciously, and thinks THE AMERICAN GARDEN has paid him.

The seed trade has undoubtedly been very large in the aggregate, but competition has cut down the business of many of the large houses in this line.

We notice that the weakness for "novelties" in name only, still holds many seedsmen by their pockets. Is a vigorous campaign necessary to stop this re-naming of old varieties?

The Cabbage plant trade is little pushed this year by the large seed houses. Competition by farmers and gardeners throughout the country has destroyed its profitableness.

J. A. De Veer has connected with himself his energetic and gentlemanly associate, Mr. Boomkamp. De Veer & Boomkamp will now push the Dutch bulb trade from 19 Broadway, New York, where they have very pleasant quarters.

The plant trade is reported as having been very large in Boston, New York, Rochester, and Queens. Probably the same is true of Philadelphia and other centers of this interest, as well as among the florists and nurserymen at local points. Prices have been low, and probably satisfactory to buyers.

The Bennett Rose supply has been curtailed by failure of the contractors to put the heating apparatus into a portion of Mr. Evans' houses in proper season. What were saved in these houses were probably the hardiest and best of the lot, so that those who get any will get some very strong plants.

One of the worst causes of the poor condition of the seed trade seems to be the growing disposition of seed growers to sell direct to consumers, instead of through the regular houses. The result has been ruin to many reputable dealers, and no great gain to either the growers or consumers. Always an expensive business to conduct, great sales are necessary to its success. Seed growing is fairly profitable in the hands of men who understand it thoroughly, and will take pains to sell only No. 1 stocks; but to add to the risks of the business by taking on the expense of a retail trade, is poor policy. The writer speaks from experience.

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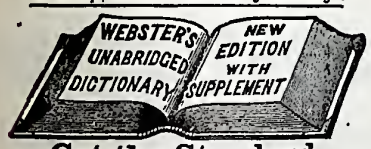

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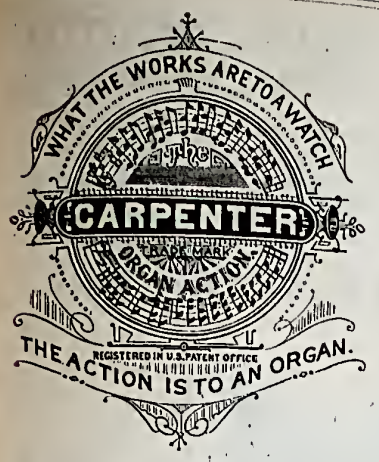

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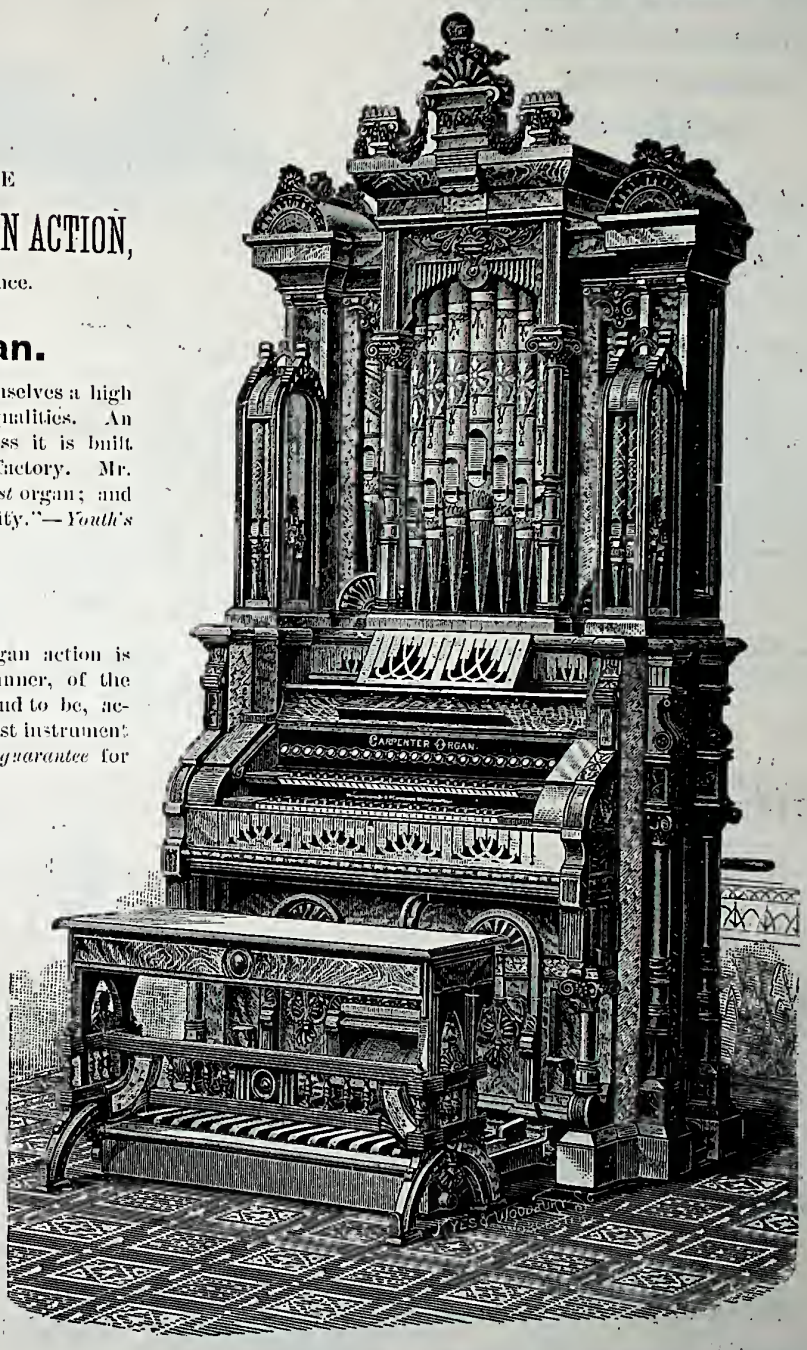

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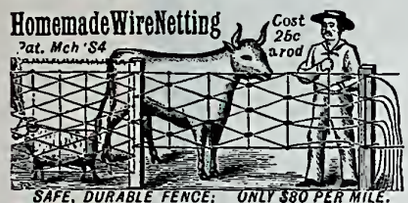

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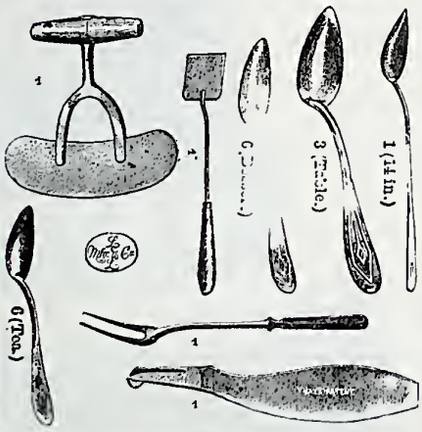

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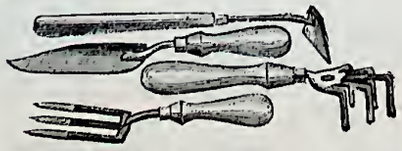

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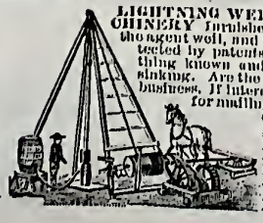

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The AMERICAN POULTRY YARD,

The only weekly Journal in existence which is devoted exclusively to poultry. $1.50 per year. Both periodicals to one address, $2.

H. H. STODDARD, Editor and Publisher, Hartford, Ct.

The American Garden Prizes of $1,000.

For New Fruits, Flowers and Vegetables.

For the promotion of horticulture, THE AMERICAN GARDEN offers the following prizes of $100 each, or silver plate of equal value. No varieties now upon the market can compete. Plants or seeds are to be sent to the committees for growing, in their own grounds for trial, under restrictions not to be propagated or sold. The prizes are to be awarded to the originators.

(*a*.) The varieties put in competition are to be shown at three or more State, National, or other equally important exhibitions, in 1885 and in 1886, under the rules of the societies where exhibited. The awards will be made by committees—chosen from among members of the American Pomological Society for fruits, American Horticultural Society for vegetables, Society of American Florists for flowering plants—in the fall of 1886, or at such times as the committees shall decide that the conditions have been met.

(1) *For the best Grape* which shall combine territorial adaptability with superior shipping and table qualities. A vine with the current year's growth, a portion of the previous year's growth, with all fruit and foliage growing thereon intact, and at least six bunches of grapes shown separately, to be exhibited as above (*a*). $100 or plate.

(2) *For the best Strawberry* which shall combine territorial adaptability with superior shipping and table qualities. A plate of not less than 50 berries, and three plants with all roots, foliage and fruit intact, to be exhibited as above (*a*). $100 or plate.

(3) *For the best Raspberry* which shall combine hardiness, productiveness and superior shipping and table qualities. Same conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(4) *For the best Gooseberry* which shall combine large size, productiveness and freedom from mildew. Same conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(5) *For the best Blackberry* which shall combine large size, good quality, hardiness and productiveness. Conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(6) *For the best New Fruit* (a new species is required) to thrive north of Virginia and Kansas. To be exhibited as above (*a*). $100 or plate.

(7) *For the best new Potato* which shall combine superior quality, productiveness, and freedom from disease. One peck to be exhibited as above (*a*). $100 or plate.

(8) *For the best new Vegetable* other than Potato (either a new variety or species), table and shipping qualities and profitableness of culture to be considered. To thrive north of Virginia and Kansas. To be exhibited as above (*a*). $100 or plate.

(9) *For the best new flowering Shrub* which shall be hardy in the Northern States east of the Rocky Mountains. To be exhibited as above (*a*). $100 or plate.

(10) *For the best new herbaceous Perennial flowering plant* which shall be hardy in the Northern States east of the Rocky Mountains. To be exhibited as above (*a*). $100 or plate.

We shall make no claims or conditions whatsoever that would influence the naming or disposition of the prize-winning varieties.

The competition is open to North America.

The names of the committees will be announced as soon as the lists can be completed.

The above conditions will not be modified, except, possibly, to simplify them.

We invite suggestions, to the end of making the above offers as useful as possible.

Parties intending to compete are requested to inform the undersigned, for record.

Reports of judges on any new fruits, flowers, or vegetables at any exhibition in America are solicited. (Signed) E. H. LIBBY, Greenfield, Mass., May 1, 1885.

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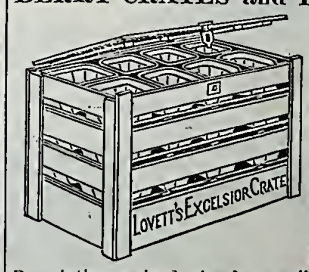
SEE

Page 184 of this issue of THE AMERICAN GARDEN for terms for trial subscriptions. Then please tell your friends of the opportunity.

BERRY CRATES and BASKETS.



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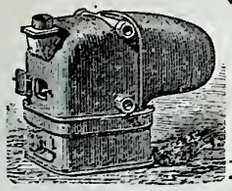

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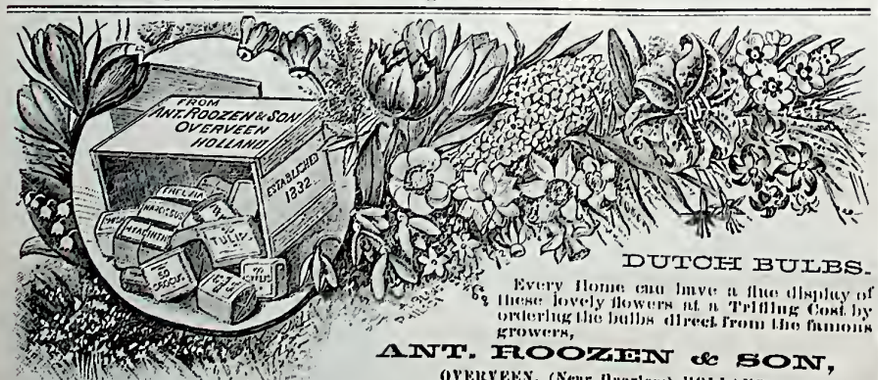

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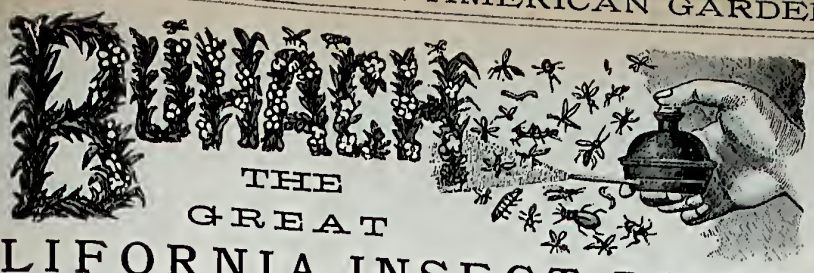
Back Numbers of the American Garden.

January, 1884, and February, 1883. If any of our readers have these numbers to spare, please address this office, naming price.



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BUHACH has been carefully experimented with and has received the unqualified endorsement of the most eminent scientists and entomologists in this country, among whom we quote: Prof. C. V. Riley; Prof. A. J. Cook; Prof. E. W. Hilgard, University of California; Prof. J. Henry Comstock; Prof. Matthew Cook, late Chief Horticultural Officer of California; Prof. W. A. Henry; Elbert S. Carman, Editor "Rural New-Yorker," New York; A. S. Fuller; Dr. F. M. Hexamer.

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BUHACH POWDER will kill Rose-bugs. Last year it was blown upon them through bellows. This year we propose to use a Buhach extract, made by dissolving four ounces of the powder in a gill of alcohol and then adding one gallon of water, applied with force pump and "cyclone nozzle." We do know that Buhach will kill cabbage worms and the dreaded rose-bug.—*Rural New-Yorker*, April 25, 1885.

CABBAGE WORMS AND POTATO BEETLES. Prof. A. J. Cook says: I found Buhach efficient in destroying the Colorado potato beetles, the caterpillars of the cabbage butterfly and plant lice.

SLUGS, CATERPILLARS, GRUBS, ETC., ETC. I find it very fatal to slugs, caterpillars, grubs, flies, mosquitos, and both parasitic and plant lice.—*A. J. Cook, Entomological Laboratory, Agricultural College, Lansing, Mich.*

BUHACH, Safe and Sure Insecticide. I have been surprised by the effect produced on the hairy Tent-caterpillar by water containing the extract of 1 lb. of powder to 50 gals. They paid little attention to the bellows and powder, at least when the wind blew; but a sprinkle of the diluted extract promptly caused them to squirm, drop off, and finally die while attempting to crawl away.—*E. W. Hilgard, University of California.*

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Write for our New Catalogue. It will give you practical hints on how to grow these beautiful plants. We are now making special offers, and have made selections of the different varieties to suit the taste of the buyer.

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Our latest acquisition is the great exhibit of the Court of Guatemala at the New Orleans exposition, comprising over **7,000** large plants, among which are fine masses of *Lycaste, Skinnerii, Odontoglossum grande, O. pulchellum, majus, etc.*

It is safe to say that our collection is unequalled by commercial florists in America.

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For any place where there is an express office, we advise sending them by express, as we thereby are enabled to send much larger plants, buyer to pay charges. Otherwise we send usually from two-inch pots, free by mail.

FOR $1.00 WE SEND:—Any 12 plants of the following sorts in varieties:—Begonias; Bouvardias; Carnations, monthly; Fuchsias; Lantanas; Pansy, finest, and Salvia splendens.

Any 15 of Alterantheras, Achyranthus, Coleus, Chrysanthemums, Heliotropes, Verbenas, Geraniums, double, single or scented, and white-leaved,—15 of above basket plants for $1.00.

Any 20, in varieties, of Petunia, single; Phlox Drummondi; Gladiolus and Tuberose bulbs, for $1.00. 12 Everblooming or eight hybrid Roses for $1.00. 100 plants in varieties, except Roses, $5.00.

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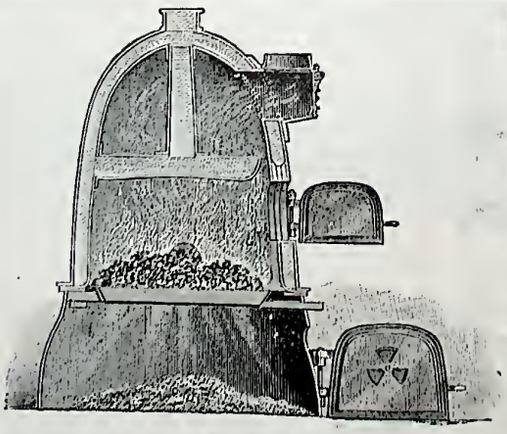
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The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

Vol. VI.
Old Series, Vol. XIII.

JULY, 1885.

No. 7.

THE FLOWER MISSION.

With every year Flower Missions, the sweetest and loveliest of all charities, are extending their benign influences over the land. The young lady teacher in a suburb of Boston little knew what a grand institution she was founding, what a glorious, immortal monument she was building for herself when she founded the Flower Mission, by giving a few flowers to the ragged, neglected children in the streets and asylums of her district. These few spontaneous gifts produced a demand for more than the young lady could supply herself, and so after consulting with some friends and soliciting their aid, which was cheerfully given, it was decided to have a notice read in the church, inviting contributions of flowers and fruits. When on the morning of the day appointed the church doors were opened, and the ladies stood ready to receive the gifts, there was no more mistaking that the chords of popular sympathy in this work had been struck; and for all times to come, let us hope, they will continue to spread their sweet melodious sounds and soothing balm wherever there is suffering and sorrow.

GATHERING THE FLOWERS OF THE FIELD.

"The first to come," says the record of the day, "were two bright-eyed girls, who, glowing with the air of their lovely country homes, and excitement from the thought of the pleasure they thought they had the means of giving, appeared with baskets filled with Bluets, Cowslips, Violets, and Anemones, nicely tied up in pretty bunches; then two more with baskets filled with English Violets; and again, another with field flowers. So far all were personal friends; the next contribution, however, was from a stranger—lovely hot-house flowers and red, ripe Strawberries. Again, a silver-wedding gift of 12 beautiful bouquets, seeming to do the donors the pleasantest memorial they could have of their own happiness. Again a Lady Bountiful sends her carriage laden with cut flowers, pot-plants, and branches of flowering shrubs, placing the carriage also at the service of the ladies, — a welcome gift indeed, for it is no light task to carry the large, flower-laden baskets to their destination. Surely an auspicious beginning: contributions from 13 sources, distributions to 150 persons."

In New York it is about eight years since a Flower Mission was organized, and the amount of good it accomplishes is incalculable.

But it is not in large cities only that there is room for the tender ministry of flowers, in every village may be found sick and destitute people to whom the gift of a bunch of fragrant flowers or a basket of fresh berries would often be a greater boon than bread or money. The bread is made sweeter by flowers.

Copyright 1885: by E. H. Libby.

The Vegetable Garden.

SEASONABLE HINTS.

The ideal garden with rows upon rows of all the delicious vegetables of midsummer, and not a weed anywhere, presents a charming view indeed. But, alas, how few of us have come near our ideals? Instead of choice vegetables, there are rank weeds, and where order and beauty should reign, desolation stares at us in too many family gardens, caused, in most cases, by simply having undertaken too much.

It is now a fitting season to consider how much more satisfactory and profitable it might have been to have planted only half or one-quarter of the area, and till it well, than to scatter the available labor over the entire ground, and do nothing to perfection.

Discouraging as a neglected garden appears, it is not beyond redemption, even at this late hour, if taken hold of at once. Stunted and failing crops, choked by weeds, had better be pulled out at once, weeds and all, and burned, and the ground plowed or spaded up, and re-planted.

Beans, Beets, Carrots, Corn, Cucumbers, Lettuce, Peas, Radishes, Turnips, Cabbage, Cauliflower, Celery, etc., may still be sown or planted, and under good treatment, will yield satisfactory crops.

Sweet Corn as a garden crop may be planted with profit, at any time, from the first of May till September. Wherever there is a strip of land for which one has no special use and does not know what to put into it, Sweet Corn may be planted to advantage. If there should be more than can be used fresh, it may be dried for winter, when it is sure to be appreciated. And if the ears should not mature sufficiently for use, the stalks make valuable fodder, or serve an excellent purpose for winter-mulching Spinach, Strawberries, etc. Plant some Sweet Corn every week!

Cucumbers require only five to six weeks from the planting of the seed till the first fruits become fit for use. Therefore seed planted early in July will generally produce a full crop. Ground from which early Peas have been removed affords an excellent place for a row of Cucumbers, and they succeed in drills as well as in hills. In either case some well-decomposed stable manure, or a good commercial "complete fertilizer" should be worked in along the rows.

This manuring in the hill, though all wrong, theoretically, works like a charm with Cucumbers, and so long as farmers can grow 200,000 pickles per acre in this way, they will probably continue to manure in the hill. With so rapidly growing plants as Cucumbers, an important object to be accomplished is to stimulate growth from the start as much as possible, so as to enable early cultivation. After the vines commence to run they will soon cover the ground so much as to make cultivation impossible.

The roots of the plants extend about as far, horizontally, as the vines do, forming a complete net-work below the surface, so that, even before the vines touch each other, the roots of one hill are feeding upon the manure in the other hills near at hand.

WHY SEEDS DO NOT GERMINATE.

We know that in every seed there is a latent germ, an embryo of a new life, which must be acted upon by natural influences before development can begin, and that when these influences do act, growth will follow. These natural influences are heat, moisture and air. All must set to work, and all must exist in sufficient quantity. If one is lacking, the others cannot make a seed grow. Hence, unless the seed is so defective that its growth is impossible, its failure is owing to the lack of one or more of these natural influences.

The lack of these influences is very frequently due to a mistake in covering the seeds. The seeds may be covered too deep or not deep enough; but the former is much the more likely to be the case. This is a hard matter to regulate; for soils vary in their power to take or to hold heat and moisture. Some soils will be heated to a depth of three inches more quickly than other soils will be heated to a depth of two inches. One kind of soil will dry to the depth of one inch as quickly as another soil will dry one-fourth of an inch. Hence we must consider the character of the soil, and plant differently if the soil is sandy or loamy, from what we would were it clayey.

I am of opinion that in two cases out of three the failure of seeds to germinate is owing to their being planted too deep. An experimenter sowed 125 Onion seeds each at the following depths: one-half, one, one and one-half, and two and one-half inches. The one-half inch depth gave 100 plants; one inch, 96 plants; one and one-half inches, 66 plants; and two and one-half inches, 12 plants. The soil was moistened during the experiment, else one inch depth would probably have given the best results.

Experiments with different soils, 25 seeds in each bed, gave results as follows: light sand, one inch deep, 23 plants; one-half inch deep, 20 plants; one and one-half inches deep, 10 plants; two and one-half inches deep, four plants. Clay soil, one-half inch deep, 23 plants; one inch, 21 plants; one and one-half inches, 16 plants; two and one-half inches, none. Mucky loam and black sand gave most plants at one-half inch depth. Sweet Corn covered one-half inch deep will germinate in 95 cases out of 100; covered five inches deep, will germinate in five cases out of a hundred; between these depths an inverse ratio of germination will be kept up—the more depth the fewer plants.

When the seeds are planted too deep they have not enough warmth, the heat of the sun not having penetrated to that depth; or they may lack moisture or air. Again, the plant will be exhausted before it reaches the surface. The bulk of the seed is plant food to nourish the plant, not only till it forms roots to suck up sustenance, but till its foliage expands above the ground, for it is only when the light acts upon its leaves that it can assimilate its food and change the mineral into the vegetable matter. It is this plant food which gives Peas, Beans, Wheat, Corn, Oats, etc., their value as food for man and beast. Now if the plant has too far to go to reach the surface, its food will be exhausted before its leaves get above ground, and it must die. This very frequently occurs in the field.

The shallower seeds can be planted, and have the necessary moisture and heat, the better they will germinate. But to have the necessary heat and moisture, it is necessary to have a certain amount of earth above them. Hence the advantage in compacting the earth above seeds; you lessen the distance the plant has to push upward to the light and also secure the necessary heat and moisture better. If the soil is placed loosely about the seed the necessary moisture and heat is lacking, because of the too free circulation of air about the seed, which dispels both moisture and heat.

Again, I have already stated that the plant cannot assimilate food until its foliage reaches the surface. But it should gather food from the soil before that time, that the roots and stem may be full of crude sap to be changed in the leaves at the earliest possible moment. The roots which feed the very young plant are exceedingly small, scarcely noticeable by the naked eye; and these roots must come in immediate contact with the moist, warm soil, or they cannot feed the plant, and the dry air will kill them. The way to bring them in immediate contact with the soil, is to bring the soil to them by pressing it about the seed. And when plants are thinned out, be careful to press the earth firmly down about those which remain.

It is a fact that all flat seeds germinate better when planted on edge, especially vine seeds, and where complete germination is very desirable it will pay to go to the trouble of putting the seeds on edge when planting them. JOHN M. STAHL.

SAWDUST ON POTATOES.

Somewhere I have seen it recommended that sawdust be put in the hill with Potatoes when planted, in order to keep the seed moist in a dry time. It will probably keep the seed moist, but it will do more; that I know from experience. It will make an excellent retreat for the white grub. Last season I examined a Potato field on a part of which sawdust had been used as above. On this section, there were white grubs almost beyond number, while on the other portion there were comparatively none. When a hill of Potatoes was thrown open with the fork, it seemed almost alive with the grubs; as the hired man said, "The patch is white with them," and it was true. In five hills apart from each other I found about 30 grubs. With this number and more in almost every hill in the sawdust section of the field, the ground would have appeared "white," indeed, could the contents of the hills have all been exposed at the same time.

Of course, it might not do to aver that the sawdust was the sole cause of the presence of the grubs, but there they were where the sawdust was, and, I might say, only there. At any rate I should quite as soon run the risk attendant upon dry weather, without the sawdust, as to take it with the sawdust and the grubs.

It may be further said, that the Potatoes in this field were very scabby, perhaps more so where the sawdust was not used. Whether the scab is caused by a parasitic, fungous growth or by the wire worm, in this instance nearly every Potato had one or more wire worms in the numerous and apparently fresh cavities in its surface. J. W. D.

ENDIVE.

This salad plant is comparatively little known except among the French and German population, yet its use is gradually increasing, in cities and large towns. The raising of this crop can be made profitable by those who will undertake the matter in a small way at first, work up a trade, and supply the demand which always exists. In proportion to the labor involved it is a profitable crop, as it can be added to the list of fall and winter salads in all gardens, with little trouble and expense.

The seed germinates easily and quickly in the warm weather of the last of July if the soil is damp, and transplanting may commence as soon as the plants have reached the four-leaved stage. I have not been able to notice that lifting the plants has done more than to retard their growth; the heads were as perfect and as large whether transplanted or not.

My practice is to sow in drills and then thin out to a proper distance, and set the thinnings. As the largest plants will make the best heads when grown, it is well to sow plenty of seed, and then use only the best among the plants. One ounce of seed will raise a thousand good heads. Endive needs warmth and moisture for growth, and cool, dry weather for bleaching. I usually make two plantings, in order to prolong the season. When the plants have made their full growth, and before they throw up the seed stalk, they are tied for bleaching.

The tying should continue till cold weather, and on approach of severe frost, all the plants should be tied up. When tied, Endive will resist severe cold, but if left exposed and open, freezing temperature will turn the inner leaves brown, which spoils its value, as the brown part cannot be eaten. Unbleached Endive is harsh and bitter. It is generally recommended to tie with bass bark, but I find white cotton cord to answer perfectly. Holding the leaves, with the heart of the plant in the center, firmly in the left hand, I make three passes around and tie. This holds it sufficiently in place, but if loosely tied the inner growth will force out at one side and remain unbleached. A week in hot weather is all that will be needed to fit them for eating, and in cool weather they will remain tied and edible several weeks. I have tried all the various methods of bleaching recommended, as covering with carpets, mats, shutters, shingles, flower-pots, etc., and have decided upon tying as the best plan.

When steady cold weather comes, the remainder of the crop is tied up, and the entire plants are lifted with all the earth that attaches to them, and carried into a light cellar where they can be kept dry and cool till wanted. I have kept Endive this way from six to eight weeks, up to New Year's.

I like the Green Curled variety the best. The White and Moss Curled are not hardy, are no better when bleached and do not grow as large. The Broad-leaved is not relished as well by the customers, therefore I raise only the Green Curled. It sells for 60 cents per dozen, and as it is easily raised, requiring little attention, except rich soil and enough moisture, the profits of the crop, where there is a good local market, are considerable.

W. H. BULL.

THE EGG PLANT.

Most of us are familiar with the fruit of the Egg Plant, though I have occasionally met a gray-headed man or woman who, in looking through our garden, inquired the name of this to them unknown plant. It certainly is not a very common vegetable in northern gardens, but with a few persons, the fruit in its season is considered a delicacy.

Being a native of the tropics, the Egg Plant is not certain to mature its fruits in the Northern States, unless given a sheltered situation, and started under glass. In favorable seasons, the earlier varieties will often ripen when started in the open ground, but stocky hot-bed plants that have been well

NEW YORK IMPROVED EGG-PLANT.

hardened off before planting out in the garden, are more reliable. The seed may be sown in the hot-bed, or in boxes in the house during the latter part of March. The young plants enjoy a high temperature, but when grown in the hot-bed, are likely to damp off unless given plenty of air. I find it a good plan to leave an occasional sash open an inch or two at the top, in all but severe weather, so long as the manure is in an act-

EXTRA EARLY DWARF PURPLE EGG-PLANT.

ive state of fermentation. On warm, sunny days more air should be given. If the plants come up thickly, it is well to prick them out when two or three inches high, in rows three inches apart each way, and to keep them as near the glass as possible, so that they will not grow up spindling. If especially fine plants are desired, it is well to pot them in small pots a few days before transplanting to the garden. They should of course be well watered after potting, and shaded for a day or two. In ordinary seasons, little will be gained by planting out in the garden in the Northern States before the first of June. The transplanting should be done, if possible, just before a rain sets in. The young plants find an enemy awaiting them in the garden. The Egg Plant is closely allied to the Potato, and the voracious Colorado beetle is anxious for a breakfast from its tender leaves. Paris Green must be resorted to when this pest is abundant, or it will soon make havoc with the young plants. Later, after the plants secure a start, they are better able to take care of themselves. Fortunately this is the only insect with which it has to contend. The only culture required is to keep the surface soil mellow. By the last of August or the first of September the fruits should be ready for use on the table or for market.

The most popular variety among market gardeners is the New York Improved. This yields very large, deep purple fruits, which in spite of their large size, are often entirely concealed by the very vigorous foliage.

The earliest variety and one of the best for garden culture, is the Extra Early Dwarf Purple. This yields numerous small fruits of a dull, blackish-purple color, which ripen ten days or two weeks earlier than the New York Improved.

Other varieties yield almost pure white fruits, some of which have a very striking resemblance to a goose egg. Plants of this variety with their fruit have attracted much attention in our garden. Another variety bears fruit of a rich scarlet color, and still another has fruit striped with yellow and purple. With the exception of the first two, none of these are considered valuable for the table.

"ELM."

FRESH SPROUTS.

The most successful Asparagus growers of Long Island, plant the roots four feet apart each way.

Sprinkling the plants with a decoction of Tobacco-stems and soft-soap, followed by a dusting of lime, is recommended by P. T. Quinn as an effective preventive for the flea-beetle so destructive in many gardens.

A machine for shelling Peas has recently been invented in Europe, which is said to be a perfect success, doing as much work as several hundred women in the same length of time.

In the experiments made with Potatoes at the Ohio Experiment Station, the varieties first to ripen were Clark, Early Harvest, and Early Ohio; Vangnard, Pearl of Savoy, Early Gem, and Beauty of Hebron ripened five days later.

An abundance of green foliage of Asparagus during the summer is necessary, if we would have luxuriant sprouts next spring, and to produce this end nothing is more effective than to give the rows a heavy coat of manure as soon as cutting is discontinued.

Prof. W. R. Lazenby thinks that with Potatoes as well as with many other vegetables, the list of varieties has become so inflated as to baffle all attempts at accurate description. The only remedy for this is to group the several varieties resembling each other in their most prominent characteristics into a class, and give them one general description.

The Fruit Garden.

SEASONABLE HINTS.

Whatever differences of opinion may exist in regard to the merits or demerits of cultivating Strawberries during spring, there are certainly none as to the necessity of giving them a thorough cleaning after bearing, and to keep them well cultivated during the remainder of summer.

Old Strawberry Beds.—The sooner after bearing they are attended to the better, and in many, if not most cases, the most suitable attention to give them will be to spade them under and plant new ones. To weed and cultivate an old, neglected Strawberry bed is a thankless task, and much more laborious than the preparing and planting of a new one. Although some varieties will continue to bear for four and five years, it proves seldom profitable to take off more than two crops from the same plants.

New Beds, where the young plants are grown on the place, can be made during summer as successfully as at any time. In small gardens, and in larger ones too, sometimes, the difficulty presents itself that the entire ground has been planted earlier in the season, and now, when a new Strawberry bed is contemplated, no available place can be found for it. This difficulty may be avoided, however, by renewing one-half of the plants every year. While, on general principles, it is preferable to plant on ground that has been devoted to some other crop, and when such is possible it may be better to do so, it is nevertheless a fact, that in some soils Strawberries may be grown on the same ground for many years, if liberal manuring is given. We know beds that have been in Strawberries for ten years, and the crops are as bountiful now as ever.

In one instance there are twelve rows, two feet apart, and the plants in the rows one foot apart. One-half are renewed every year. The plants set out two years ago are spaded under immediately after bearing, incorporating at the same time a heavy dressing of composted manure. The ground is raked over occasionally, so as to kill every weed as soon as it germinates.

The remaining six rows, which were planted one year ago, are hoed and cleaned, and all runners removed except one or two of the strongest from each plant, which are layered in the loose soil. So soon as the young plants are large enough, they are taken up on a damp or cloudy day and carefully transferred to the new bed without disturbing their roots. The plants do not seem to notice the removal at all, they keep growing on uninterruptedly, and hardly one in a hundred is lost. They will bear a very good crop next season, and a still better one in two years, while next summer they furnish young plants for the other half of the bed to be renewed in the same manner.

This plan may not prove satisfactory on some soils, in fact we know it does not succeed everywhere, but having the above observation before us, we would surely prefer to replant without rotation of ground, than not to plant at all, and run the risk of going without Strawberries.

CULTIVATING STRAWBERRIES.

Too many owners of Strawberry beds, unfortunately, will not require to be cautioned against avoiding cultivation at any time of the year, yet as spring cultivation has been strongly recommended recently, I wish to state that my experience does not favor this plan, and leads me to the conclusion that during the fruiting season, or from the time the plants blossom until the juicy crop is harvested, it is not safe to stir the soil to any considerable depth. The reason for this is obvious. The plants are putting forth every effort to produce fruit to their full capacity, and if the roots are injured at this time, especially when the soil is dry, it is sure to check the growth and consequently diminish the fruit crop.

A case in point is that of an elderly friend of mine, now deceased, who a few years ago, having retired from active labors in the ministry, developed an innate taste for gardening in a well-cared-for little Strawberry bed containing a few plants each of the choicest varieties. This patch of Strawberries was really a pet of the good old gentleman.

The first time it furnished a supply of fruit it was presented in payment with a liberal dressing of fine compost, lightly worked in between the rows. Unluckily this contained a quantity of vile weed seed which had escaped decay. This was a source of trouble during the remainder of that season. The following spring a light hoeing was given soon after the winter mulch was removed, but during the blossoming season the weeds came up thickly. The ill health of the owner prevented his personal attention to the matter, so a neighbor, with more good will than knowledge of Strawberry culture, gave the whole bed a deep stirring with a prong-hoe, undoubtedly complimenting himself on the thoroughness of his work.

The result, I regret to say, was a failure of the crop and a lasting injury to the bed, much to the disappointment of the owner. The experience, however, proved a practical lesson to both himself and to the neighbor.

W. H. Rand.

FRUIT GROWING IN FLORIDA.

A northern correspondent of The American Garden, writes me as follows: "My health demands I should seek a milder climate, and my attention has been drawn towards Florida. Could I not make more than a living at small fruit growing there, Strawberries, principally? I see frequent mention in the papers of the large quantities of berries sent North from that State."

Yes, the papers frequently teem with such items as the following, which I noticed in a Florida paper to-day. "An Ocala fruit grower picked and shipped in two days last week, 700 quarts of Strawberries from three-sevenths of an acre of ground."

This reads nicely and makes visions of wealth and profit loom up in the distance. It would amount to 1633 quarts or 51 bushels per acre in two days, and we would naturally suppose two or three pickings had preceded or would succeed it, which would swell the story still more. If the paragraphist had only added the net cash receipts to the item, it might have given it a little more fascination, and have been more business-like. I am free to say that the only instance I have seen that looked at all like a promising success in Florida Strawberry culture was near Ocala, the owner having then about ten acres in bearing, from which he expected or hoped to pick 20,000 quarts. If the statement quoted refers to him and is true, his expectations, which to me appeared rather high, would seem about to be realized from only a portion of the crop. His first picking was made Feb. 2d, and consisted of 13 quarts. Now could his or any other Strawberry bed in that locality have held out two months, and given such a yield as quoted above? The idea seems preposterous, and due reflection induces me to regard this and similar statements as vain exaggerations, the results of inordinate State pride, and should be taken with a good deal of allowance.

Florida is a large State, 400 miles long. I have been over but a small portion, comparatively, but with the single exception above mentioned, I have seen no flattering attempts at Strawberry culture. Here on Indian River, latitude 28°, 250 miles south of Jacksonville, every attempt to grow them, that I have heard of, has proved an entire failure. The failure is attributed to the long, dry summers, by those who have experimented. I think on moister land contiguous to fresh water, in more northern parts of the State, where "malaria is a foot thick," as a gentleman expressed it to me a few days since, when canvassing this very subject, locations abound where Strawberries will do fairly well, and I hope repeated trials and experiments will demonstrate that they can be grown by irrigation, mulching, shading, etc., in localities naturally unfavorable to them, but I do not believe that with our present varieties, Strawberry culture in Florida will ever approach the perfection attained in our Northern States. The climate and other conditions are so changed here, that it requires time and experiment for both plants and planter to become accustomed and adapted to the changed conditions, so as to know how to behave.

I fear the person who expects or attempts to make a competence at growing Strawberries in Florida, will very soon retire in disgust, and try other fields and pastures new.

E. Williams.

DRYING AND BLEACHING APRICOTS.

The Riverside Press and Horticulturist says: The fruit when ripe is picked, cut in halves, the pits are removed, and the pieces are placed round side down on ordinary trays, such as are used in the drying of Raisins.

When these trays are filled with fruit they are stacked up in one room of the fruning house, one tray being put on top of the other. The room can be made as full of trays as convenience in handling would dictate. The sulphur is then burned in the center of the room and the door is closed. From 20 minutes to half an hour is sufficient to fumigate the room full of fruit if the smoke is made dense, which is easily done. At the expiration of this time the door is opened and the wind soon clears the room of smoke, when the trays are removed to the drying ground.

After the fruit is sufficiently sun-dried it is placed in a fruit-drier, where the temperature is put up high enough to kill any insects or eggs that may have lodgment on the fruit during its drying.

THE JUNE-BERRY.

Amelanchier Canadensis.

While progress in the improvement of some of our native fruits has been rapid and surprising, it seems strange that other kinds have been entirely ignored. Among these is the June-berry, also known as Service-berry and Shadbush, a widely distributed shrub or small tree. It is found almost everywhere throughout the woods of the United States, and, bearing its pure white flowers in large terminal racemes, early in spring when trees are yet bare of leaves, it forms a most conspicuous as well as attractive object of the forests. The species varies exceedingly, so much so that its many forms have been divided into five distinct varieties: *Botryapium*, *oblongifolia*, *rotundifolia*, *alnifolia*, and *oligocarpa*.

The fruit, which ripens in June, is berry-like, roundish, purplish when ripe, sweet or slightly subacid, and pleasant to the taste. With these good qualities to start upon, there seems to be no reason why the June-berry should not be as amenable to improvement as other members of the Rose Family.

THE JUNE-BERRY.

BLOSSOMS AND BEES.

The true meaning of flowers was not understood by anyone a hundred years ago. Their bright colors had attracted the eye, but they did not lead to any deep insight until Sprengel began his famous investigations upon floral organs that resulted in a book,—"The Secret of Nature in the Form and Fertilization of Flowers Discovered." In this book we learn that the important work of the flowers in the economy of the plant, was to aid in producing seed. More than this, it was seen that the various species of plants had provided means for the fertilization of the young seeds, with dust from some other flower than its own.

The bright colors, the fragrant odor and the sweet nectar, are all designed to help on this work of cross-fertilization. Sprengel remarked of the Cranesbill, for example, that "the nectar of these flowers is secreted for the sake of insects, and it is protected from rain in order that the insects may get it pure and unspoiled." No generous spirit induces the plant to provide nectar for the insect tribes, and attract them to the feast by a display of bright colors. It has learned from the experience of its ancestors through an extended line of generations, that it is cheaper in the long run to develop the sweet and the showy parts, than to run the risk of degeneracy and final death of the species through close inbreeding.

This whole subject of close and cross fertilization of flowers, has engaged the attention of the best observers within the present century, and the truths by them established are beginning to enter the minds of the people generally. There is great pleasure in seeing this diffusion of a knowledge so new that the series of observations that developed the truth may not have yet terminated.

Cross-fertilization of flowers, that is, the fertilization of the young seeds of one flower by the pollen of some other flower, is now considered as the method by which strong, vigorous seeds are produced. Darwin, who has been the foremost student in this field, expresses his convictions thus: "Nature abhors continuous close-fertilization." Gardeners sometimes have serious trouble with some fruit-plants. Their Strawberry bed, for example, may not be productive. The fault may lie in the imperfect stamens the flowers produce. Select a sort with good stamens and replace the old bed with this, or let the new ones be placed in alternate rows.

In many ways the fruit grower may advance his interests by a knowledge of the functions of flowers. Besides all this, there is the unmeasured satisfaction of knowing. The methods by which plants secure cross-fertilization are various, and some of the books upon the subject are both large and very interesting. If this brief mention of the great subject will induce a dozen gardeners and fruit growers to carefully read Darwin's "Cross and Self-Fertilization in the Vegetable Kingdom," and Muller's "Fertilization of Flowers," it will have secured its purpose. I have no more personal interest in these works than in any others that will do an equal amount of good. Here is a fund of practical and valuable information that all readers of THE AMERICAN GARDEN should know about.

BYRON D. HALSTED.

SHORT CUTTINGS.

Prof. Budd thinks that the idea that the Russian Apricot will take the place of the Peach is the sheerest nonsense.

Long experience, says E. P. Roe, has taught me that profit in growing small fruits for market lies in the direction of quality, not quantity.

Dried Orange peel is a more important article than is generally supposed. The quantity imported into New York annually is valued at $12,000.

In the Rural New Yorker Grape election, the largest number of votes for the best black varieties was given to Concord and Worden; red, Brighton and Delaware; white, Niagara and Lady.

Scale on Orange-trees can be completely removed, it is stated, by mixing 20 pounds of lime with one gallon of petroleum; then add 100 gallons of water and spray the trees. One application is said to be sufficient.

After twenty-five years' trial of the Wilson in comparison with all the highly praised Strawberries S. M. Smith, President of the Wisconsin Horticultural Society, places it first on the list of profitable market berries,

The Flower Garden.

WATER-LILIES.

I muse alone, as the twilight falls
Over the gray old castle walls,
Where a sleepy lake through the lazy hours
Crisply mirrors the time-worn towers;
And scarce a whisper rustles the sedge,
Or a ripple lisps to the water's edge,
As far and wide on the tideless stream
The matted Water-lilies dream.

I stood, in the quiet even' fall,
Where, in the ancient banquet hall
Over the hearth, is a panel placed,
By some old Florentine chisel chased,
Showing a slender, graceful child,
In the flowing robes of a wood-nymph wild,
Bending over the wavy flood
As she stoops to gather a Lily bud.

In words as quaint as the carving old,
An aged dame the story told,
How an Earl's daughter, long ago,
A strange, pale child, with a brow of snow,
Had loved, and lost her life for the sake
Of the Lilies that grew in her father's lake,
Holding them over her favorite flower;
Till once, in the hush of a twilight hour,
Floating among them, out in the stream,
Where the passionless blossoms nod and dream
They found her lying, white and dead,
"Like a sister Lily," the old dame said.

And a sadness, born of the old-world tale,
Haunts me still, while the starlight pale
Gleams on the leaves, so green and wet
Where the changeless Lilies are floating yet,
And a message I fain would read aright,
Seems to lurk in each chalice white,
A secret, guarded fold on fold,
As it guards its own deep heart of gold,
And only told to the listening ear
Of him who humbly tries to hear.

Oh! mystic blossom floating there,
Thing of the water, thing of the air,
We claim thee still, as we hold the dead,
Anchored to earth by a golden thread.

—*Good Words.*

SEASONABLE HINTS.

The beautiful group of *Lilium auratum*, represented on the opposite page will, no doubt, recall to the mind of some of our readers, their successful attempts in growing this "Queen of Lilies." Having ourselves grown many thousands during twenty years, both successfully and otherwise, we are fully aware that, even under apparently most favorable conditions, this capricious Lily will sometimes fail to fulfil expectations.

A deep, light, and well-drained soil, and before all a situation where water will not stand at the surface for any length of time, are considered indispensable for its successful cultivation, and yet we have them now growing splendidly under directly opposite conditions.

Three years ago we planted about two dozen bulbs in what seemed then a most unpromising spot, a heavy, wet, clay soil, on which water stands not unfrequently. Here they have been growing stronger from year to year, and stand now in full vigor and beauty. All the care they had was a covering of forest leaves during winter, and one or two hoeings in summer.

From this we do not wish our readers to infer that we advise the planting of Lilies in heavy clay. We simply relate this incident to show the value of observation and experimentation, and the benefit that may sometimes be derived by cutting loose from old routines and precepts.

SOME GOOD PERENNIALS.

JAPAN SPIRAEA.

How hard it is to make the correct name of a plant popular, after it has once come into common culture under a wrong one, is especially the case with the plant under consideration. It was brought into cultivation under the name of *Spiræa Japonica*, having been introduced from Japan. Then we were told that it was not Spiræa but Astilbe. This was shown to be wrong in that it differs from Astilbe, which is apetalous in its flowers. While this controversy was going on in florists' catalogues, it was discovered that the plant had been named and described long ago by Siebold as *Hoteia barbata*. The name Hoteia was given it in honor of Ho-tei, a Japanese botanist who was the author of a work called Sov-Kwa-S'jua, which includes descriptions of more than 350 plants, natives of China and Japan. This work was accompanied by 80 plates, designed by M. Siebold. The specific name *barbata* is better than *Japonica*, as the plant is a native of various parts of India as well as Japan. The erroneous name of *Spiræa Japonica* is now so commonly applied to this plant that it has taken the place of any English name, and will answer all purposes, except when it is necessary to be botanically accurate.

I started out to say that this plant now so commonly used for forcing in the spring, is an admirable herbaceous border plant, where the ground is inclined to be moist and slightly shady. It is not satisfactory with us in a dry location and full sun.

PERENNIAL CANDYTUFT.

This hardy border plant, botanically *Iberis sempervirens*, I noticed in fine bloom this spring at the Agricultural Department grounds at Washington. A mass of its snow-white flowers in front of some dark evergreens was very effective. Another species, *Iberis Gibraltarica*, is equally good, but not so hardy with us.

PEONIES.

I also noticed at the Agricultural Department a large collection of Peonies, but none were then in bloom except a bright crimson, single-flowered one with finely laciniated foliage, *Pæonia Russi*. I advise all lovers of Peonies to get this bright, early-blooming species, as it is well worth growing for its pretty foliage alone. It is not a new kind though not common. A plate of it may be found in Vol. 62, Botanical Magazine for 1840. It may be under some other name now at Washington.

SPREADING SAGE.

Another herbaceous plant, but not hardy, is rarely seen in perfection, though no plant in cultivation can equal its rich shade of blue. This is the *Salvia patens*, or spreading Sage. It blooms readily the first season from seed, but to have it in full beauty it should be cut down, lifted and potted in autumn, and kept nearly dry during the winter. A large plant of *Salvia patens* is well worth all the room it requires. I find that it varies somewhat from seed, some plants being much higher colored than others. Only the best should be kept.

ANEMONES.

Why is it that the varieties of *Anemone vitifolia* are not more popular? We seldom see these in perfection. Is it not because in our hot and dry climate we give them too sunny an exposure? Dr. Wallich says, "It is one of the commonest as well as most ornamental flower-plants of Nepal, where it grows in all the forests of the great valley, and the surrounding mountains, delighting in shady, retired and moist situations in the vicinity of rills and torrents." It is also found in the moist valleys of the Himalayas. And yet our gardeners expose a plant from such situations to the full sun in our arid climate. To those who have never seen these Anemones under favorable conditions, they will prove very attractive when thus grown; though they do quite well under ordinary culture. A number of improved varieties have been raised in garden culture, which are superior to the original species.

But of all hardy, herbaceous scarlet flowers, I know of none that surpass in effectiveness the Scarlet Anemones. An old Eastern Shore garden with a large bed of double scarlet Anemones, is one of the bright memories of youth, which I have often tried to imitate with indifferent success. They are too tender near Baltimore, but when they do well nothing can exceed the brilliancy of their color in masses. In cold frames I have always had the best success, both with these and the Persian Ranunculus.

PERENNIAL LARKSPURS.

I have an old friend whose passion is for hardy, herbaceous plants, and he has almost every kind worth growing. I take a great deal of pleasure in looking over his borders when in bloom. The contrasts of color are sometimes startling when a great, flaunting, scarlet and black Poppy stands beside a spike of *Delphinium formosum*. And this reminds me to say that no flower has of late years been more improved than the different varieties of perennial Delphiniums. The best strain of *D. formosum* which I have ever grown is *Delphinium bicolor grandiflorum*. At one of the exhibitions of our Maryland Horticultural Society last year, the old friend above alluded to, exhibited a spike covered with blue flowers, each one of which was about the size and shape of good, double Daisies. I was utterly at a loss what to call it until our friend produced a leaf which showed it to be a Delphinium. He had received it from Belgium as the latest triumph in improved Delphiniums. It was beautiful but too much "*improved*." I much prefer the brilliant, single-flowered sorts. And allow me to say that the big scarlet Poppies are well worth growing. WM. F. MASSEY.

THE SWAN RIVER DAISY.

Blue flowers are usually scarcer than other colors. Australia abounds in blue flowers and has contributed many good plants to our gardens. Among the best of these is the little Swan River Daisy, *Brachycome iberidifolia*. This is a dwarf and free-flowering annual. Its flowers resemble the *Bellis integrifolia* or American Daisy. It succeeds finely as a dwarf edging plant. The color is usually bright blue, but it sometimes varies through purple to a pale pink. All who want a neat, dwarf, blue "Daisy" we advise to try the *Brachycome*.

HAVING A THOROUGH GARDENER.

"Yes," said a lady of refined taste, "the place is elegant, but there is no love in it; it seems as though the family have no real love for any one plant, shrub or bed. They must have a thorough gardener."

MIGNONETTE.

Reseda odorata.

Everyone knows, I presume, that the Sweet Mignonette thrives in the early autumn months, thus showing that it requires a cool, moist atmosphere. To have it succeed best it should be grown in a deep, moderately-enriched, loamy soil, dug to the depth of two feet, and at the same time thoroughly incorporating a good portion of well-decayed manure.

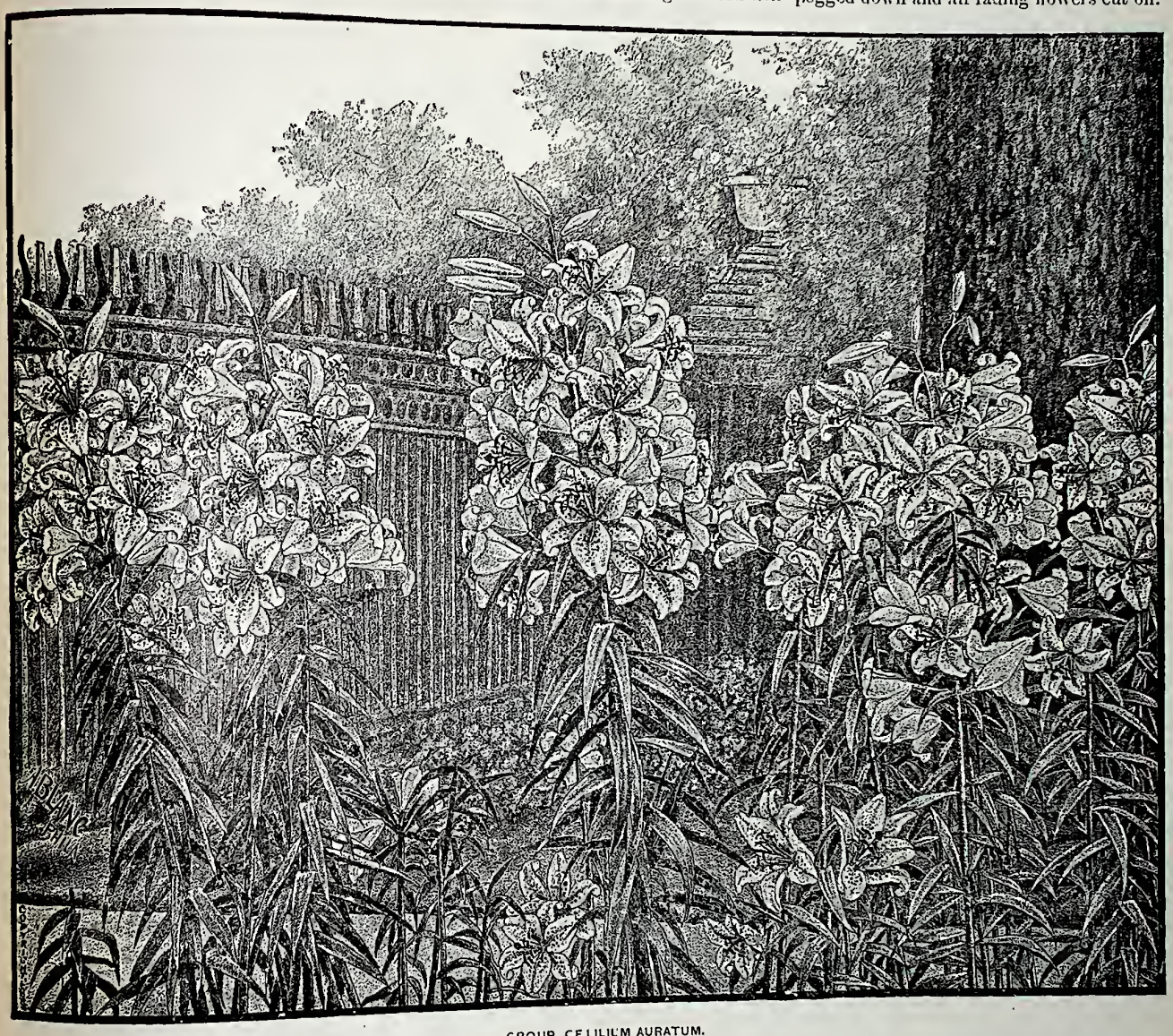
All preparatory work should be done as early in the season as possible, so that the ground becomes well settled before the seeds are sown; if this is not feasible, then firm the ground as thoroughly as possible and finish by leveling it neatly. Now mark it out into rows about ten inches apart each way, and at each intersection scatter a few seeds, covering them slightly, and as soon as the young plants are strong enough to handle, remove all but one of the most promising. This sowing, which should be made about the first of May, will give a profusion of bloom during the greater portion of the summer months, and, where only one sowing is made, is the most useful.

For earlier flowering, the seed should be sown in a well-drained pot or pan of light, loamy soil about the first of March, and placed in gentle heat in a moist situation, as close to the glass as possible, and as soon as the young plants are strong enough to handle, they should be carefully removed into two or three inch pots filled with rich, loamy soil; place one plant in each pot and keep all close and moist until they commence to grow, then place them in a cooler, airy situation, and when the weather becomes warm and settled transplant outside.

For late flowering, the seed should be sown where the plants are to bloom, about the middle of July. Cover the seed to the depth of an inch, and firm the earth thoroughly around it. By so doing the seed will germinate quickly, while it will certainly fail if sown carelessly. Treat the plants precisely as advised for the main sowings, and from the first of September there will be an abundance of bloom until the plants are destroyed by frost. If some of these plants are so situated that a cold frame can be placed over them, and it is well protected on cold nights by means of mats or shutters, the supply of flowers will be continued for a much longer period.

Recently this old favorite has given us some very distinct and desirable varieties, the Golden Queen and Hybrid Spiral being quite an advance on the older sorts. Of the latter, I prefer the Prize Taker and Parson's White. This year the Machet and Large White Upright are listed among the latest and highly praised novelties. Any of these new or old varieties, if properly cared for, will surely give satisfaction.

CHAS. E. PARNELL.



GROUP OF LILIUM AURATUM.

OUR FLOWER BASKET.

The White Cottage Rose, difficult to raise from cuttings, is easily propagated by layers.

Verbenas to do their best must have rich soil and a sunny position, have the branches pegged down and all fading flowers cut off.

Petunias trained on stakes are more effective than trained in any other way. Three or four should be planted around a short stake to which they are tied as they grow taller, and when of sufficient size, allowed to droop over, all around.

Not less than two millions flowering plants are probably sold in New York every spring. These retail from 10 cents to $1 each, averaging perhaps 25 cents, and making a grand total of half a million dollars which the city and its suburbs devote annually to the embellishment of their gardens and windows. This does of course not include cut flowers.

The Window Garden

AND GREENHOUSE.

THE WINDOW GARDEN FOR JULY.

During the summer months we do not mean to keep plants in our windows; it is better for our rooms, and the plants too, that the latter be outside in some suitable place. Those who have greenhouses may make an effort at display even in summer, and this is usually done by the use of Ferns, Crotons, Dracænas, Palms, colored-leaved Caladiums and other plants that dislike full sunshine or are permanently planted out in the greenhouse.

In the out-door summer treatment of window or greenhouse plants the care and cultivation are about the same,—we aim to have healthy, vigorous, stocky plants, well rooted and matured enough to assure an abundance of flowers in winter or spring.

The usual routine of watering, cleaning, shortening, staking, tying, preventing over crowding, and the like, requires vigilant attention.

In order to change matters a little, I will tell you how my own stock is "fixed" for the summer; did I know how better to treat it, I would do so:

CALLAS

Were shaken out of their pots and planted singly, some in open, sunny, and others in somewhat shady ground. I won't water them in summer. In August or September I'll lift and repot them.

CARNATIONS

Are planted out and mulched. What flower-spikes they bear are pinched out, but I don't pinch Hinzy's White after June.

LADY WASHINGTON GERANIUMS

That have done blooming are turned out of their pots, and planted in a half shady place. I give them no water. The young growth they make a little later makes capital cuttings which make fine blooming plants for next spring. If I shall want them I'll lift and repot some of the old plants in fall.

ZONAL GERANIUMS

Are in four-inch pots and plunged in frame; they were "struck" in April. I shall soon shift them into five or six-inch pots, which are large enough for winter use. Keep the plants quiet, don't encourage growth, but instead, ripe, stocky wood; don't over-water nor feed with stimulants. Doubles are better than singles as cut flowers.

VIOLETS

Are young stock planted out in rows in beds and mulched. I give them water occasionally and keep the runners cut away.

BOUVARDIAS,

Old and young, are planted out and mulched; they were cut well back before they were set out, but now are growing freely and cut in to keep them bushy. They bloom well in summer if permitted, but I want them for winter work, hence won't let them have unrestricted freedom before September.

EASTER LILIES.

Are growing in pots, plunged out-of-doors and unheeded except to keep them clean from weeds. In the case of *Lilium longiflorum* particularly, I get finer results from bulbs grown year after year in pots and top-dressed but not repotted every year, than I do from good bulbs grown in the ordinary way out-of-doors and potted in fall.

STEVIAS, PARIS DAISIES AND HELIOTROPES

Are in pots plunged out-of-doors. When planted out they grow too much. Pinch them freely and give them plenty of water and plenty of room.

POINSETTIAS.

The old plants were cut hard back, and when they had started a little were turned out of their pots, the old soil all shaken away, and the plants repotted into as small pots as we could get the roots into. They are growing nicely and plunged out-of-doors in a sunny place. Plants from cuttings put in two months ago are well rooted, in small pots, and plunged in a frame.

CHINESE PRIMROSES.

Some are in two-and-a-half, three, and four-inch pots, in a cool frame and shaded from strong sunshine. Repot as soon as the roots show a tendency to become root-bound. Seeds sown now should yield blooms for next winter or spring.

NASTURTIUMS

Are now acting as Peas in covering brush. About the end of this month I shall strike some for flowering in winter. The varieties of *Tropæolum Lobbianum* are best. Feed them liberally if you desire to get large, fine flowers.

BEGONIAS.

Tuberous-rooted kinds are planted out in a slightly shaded spot, and some with Gloxinias in a frame; the Rex section are in the greenhouse, also plunged out-of-doors in the shade; the big-leaved ones like *B. heracli-folia* are planted out in a shady place but not under trees; and the many fine-flowering, tall-growing kinds like *B. fuchsioides* are plunged in an open bed.

AMARYLLISES

That had done blooming are plunged in a cold frame and have a screen of laths laid over them.

CRINUMS.

Of the Caribbean one I have a good many bulbs and planted them out in a cold-frame; they are now in bloom and very pretty.

FUCHSIAS

Are treated almost in the same way as we do Lady Washington Geraniums. My best blooms now are on March-struck plants. If you want a big flower get Phenomenal.

GLOXINIAS

Are planted out in frames, growing freely and beginning to blossom. Seedlings raised last March will bloom in August and September; if I had had room to grow them along unchecked I could have some of them in bloom now. I have had old plants in bloom in pots for some months past. Shade them, water them sparingly and don't wet their leaves, else you may induce "rust."

ROSES.

Young stock are planted out. In this way I get a far better growth in them than I can by keeping them in pots, and they are less subjected to mildew. In early fall I shall lift and pot them and get them well rooted in their pots before winter sets in.

CHRYSANTHEMUMS

Are growing fast. Don't pinch them much more else you may make them late. Give them lots of water and liquid manure, stake them firmly and destroy aphides. With a sharp spade cut around the roots of those you intend to lift and pot in the fall.

MAHERNIA ODORATA

Has sweet little yellow flowers in winter and spring. When planted out it grows beautifully, but it is hard to lift, therefore, I advise you to grow it along in pots.

BROWALLIA JAMESONI

Has become very popular since a year or or two. Planted out or grown in pots it is equally serviceable. It bears immense bunches of orange flowers in late winter and spring.

LEMON VERBENAS

Belong to that class of plants, as Fuchsias, Crape Myrtles, and the like, can be wintered safely in the cellar, therefore I prefer to plant it out in summer for summer use only.

CALCEOLARIAS AND CINERARIAS.

I shall sow some of these now, also another sowing in August and one in September. They need a cool, shady place to grow in, and should never know what thirst means. A cold-frame on the north side of a building is a good place for them. Slugs are fond of them, green fly infests them, and I have been so much annoyed by crickets eating them that I have had to raise the little frame containing them off the ground as if on a table, or use mosquito-wire-netting as a covering to the plants.

STOCKS.

Sow some of the biennial sorts as Intermediate, Brompton, East Lothian or Emperor, and grow them along in pots. They will yield you next spring, for out-door or in-door use, a large amount of flowers. A well-wrapped cold-frame is all the winter quarters that they need.

SWEET ALYSSUM.

I would advise you to get some plants of the strong-growing, double-flowering sort, and grow it along vigorously in pots and in an open situation, so that you shall have strong plants for work. Then give it a place near the light and lots to drink and you will have blossoms as long as the snow lasts.

LIBONIAS

Are copious winter-bloomers. Mine are planted out. I shall lift and repot them next September.

CYCLAMENS.

Old plants were turned out of their pots and planted very closely in a cold-frame, burying the corners about an inch or thereabout. I don't give them any water. As soon as they start into fresh growth I shall lift, repot, and again return them to the frame, but plunged. The seedlings I raised last spring I have potted off singly and am growing them on unchecked.

WM. FALCONER.

FERNS FOR A HALL.

Nothing is prettier in a front hall than brackets of living plants; and nothing else will give so distinctive an air of friendliness and welcome. The plants may be grown in pots, set in handsome pot covers, and supported by elegant bronze brackets; or, if this seems too expensive, simple wooden brackets, carved or stained, and corner shelves are nice enough for anyone. If plants of a drooping habit are used they will soon hide the pot, so the costly pot covers are not essentials. But the heart of the whole affair is in the plants chosen. They must be plants with persistent foliage, and which thrive well in a cool and somewhat dark room. Then success will come.

THE PARIS DAISY.

Chrysanthemum frutescens.

Last spring a florist sent me one of the new Paris Daisies, or Marguerites. I potted it in ordinary garden soil, and it soon began to grow. Soon buds made their appearance among the pretty foliage. At first, these buds were well down among the leaves, but as they developed, their stems elongated rapidly, so that when they came into bloom, the flowers were borne well above the foliage. The flowers were single, a ray of white, narrow petals about a yellow disc,—a somewhat enlarged field Daisy, no more, no less.

But it must not be inferred from this that I was not pleased with the plant. On the contrary, nothing in the line of new flowers that was sent me last spring afforded me as much pleasure. Notwithstanding it is "only a weed," our well-known Daisy is a really beautiful flower, and any species of it which can be grown in the house is a decided acquisition to the lover of modest flowers. The plant grew well and was in bloom all summer. It continued to bloom all through the winter, and was greatly admired. It was very useful in furnishing cut flowers for small bouquets.

This spring it has been literally covered with bloom. The plant has grown to a height of nearly three feet, is compact and bushy, and would be well worth growing on account of its fine, profuse foliage, which makes an admirable background for bright flowers. No insect has ever attacked it. It is as easily managed as a Geranium. If any one wants a pretty, clean, bright-looking plant, they can scarcely do better than to get one of these beauties. E. E. REXFORD.

FLOWER-POTS.

The relative value of hard-burned and soft or porous flower-pots, so far as the culture of plants is concerned, is a subject of occasional inquiry. Hard-burned pots are not generally esteemed, says Superintendent Wm. Saunders, and many persons consider them unfit for the best results of plant-culture, while others find no objection to them, and use indiscriminately glazed pots or even slate tubs, when they can be procured. The only difference seems to be that the porous pot requires more water than will be found necessary in the case of hard-burned pots or slate tubs.

Porous pots will part with much water by evaporation from their sides, especially when exposed to the sun or a dry atmosphere. In a dry atmosphere the hard, close-grained pot will retain more moisture in the soil. Plants, therefore, require water less frequently in the hard pots; and in the ordinary greenhouse where a considerable amount of humidity generally prevails, special care will be required in order that water is not given in excess. The same amount of water applied to plants of similar size and vigor, some of which are in hard and others in soft pots, will speedily show unhealthiness in those in the hard pots. It is perfectly practicable to grow plants equally well either in soft or in hard pots, but the details of management are different, and to those who are not experts in plant culture, the porous pot will be most suitable.

CLERODENDRONS.

Among the many beautiful plants at our exhibitions, none are surer to attract the admiration of visitors than well-grown specimens of Clerodendron, and it is with much truth that Peter Henderson says: "It is difficult to conceive more beautiful objects than several members of this genus when well cultivated."

Cuttings taken off any time during summer, root readily, or in winter in gentle heat, and should be kept in small pots through the succeeding winter, on a shelf or underneath a bench in the greenhouse. About the first of February repot them, giving them a liberal shift. The soil should be light and very rich. To flower freely they require frequent shiftings from smaller into larger pots. With this treatment they can be made to bloom continually during the entire season.

Old plants can be grown on with occasional shiftings, and make splendid plants for garden decoration during summer. They must, however, be grown in the shade. After flowering water freely, in order that they may make a good growth, after which they should have partial sun to ripen the wood. If not wanted for winter flowering, remove the plants in the fall to a light cellar free from frost, giving them during winter just enough water to sustain life. In the spring when all danger from frost is over, remove the plants to any desired position in the garden or on the veranda for another season of bloom.

CLERODENDRON BALFOURII.

Clerodendron Balfourii is the best and most showy species, and one we have seen in full bloom a number of years in succession, with the above treatment. It makes a valuable climbing plant when so desired.

It is a good plan to put a layer of moss over the drainage in large pots to prevent the soil washing down.

Plants may be grown in comparatively small pots if watered occasionally with a weak solution of guano, or sulphate of ammonia.

HOW TO PRESERVE CUT FLOWERS.

An important rule, though seldom regarded, says Popular Science News, is never to cram the vases with flowers; many will last if only they have a large mass of water in the vase, and not too many stalks to feed on the water and pollute it. Vases that can hold a large quantity of water are much to be preferred to the spindle-shaped trumpets that are often used. Flat dishes filled with wet sand are also useful for short-stalked or heavy-headed flowers; even partially withered blooms will revive when placed on this cool, moist substance. Moss, though far prettier than sand, is to be avoided, as it so soon smells disagreeably, and always interferes with the scent of the flowers placed in it for preservation.

In the case of flowers that grow only in a cool temperature, and suffer when they get into warm and dry air, all that we can do is to lessen evaporation as much as possible, and, when such flowers have hairy stems and leaves, to submerge them for a minute, so that by capillary attraction they may continue to keep themselves moist and cool; but this is dangerous to table-cloths or polished surfaces, unless care be taken that the points of the leaves do not hang down to prevent dripping.

Another means of preventing delicate and sweet-scented flowers from flagging, is to cut them with several leaves on the stem, and, when the flower-head is placed in water, to allow only this head to remain above the water, while the leaves are entirely submerged: by this means the leaves seem to help to support the flower, which will then last for three days in a fairly cool room. Frequent cutting of the stem is of great use; but with all flowers, by far the best plan is to put them outside exposed to dew or rain, during the night, when they will regain strength enough to last on for days. All New-Holland plants, particularly flowering Acacias, are benefited wonderfully by this apparent cruelty, and will even stand a slight frost far better than a hot room at night, indoors.

OUR WINDOW BOX.

The new *Begonia hybrida gigantea*, now introduced from Germany, is said to have flowers six inches across, probably the largest of the family.

A properly arranged window-box, judiciously planted and cared for, may sometimes give more pleasure to its owner than a large garden.

Those really anxious to grow plants will always find out ways and means to gratify their tastes, even under apparently insurmountable difficulties.

The Scarborough Lily, *Vallota purpurea*, is one of the most easily grown and prettiest window plants, yet it is seldom seen outside of florists' establishments.

A healthy Date Palm, which its owner, a dock laborer, had raised from a seed, in a dingy little room in a tenement house, was awarded a first prize at a London flower show, much to the delight of its owner.

Lawn and Landscape.

OUR ELMS.

Of all common native trees which submit readily to the requirements of the gardener, the American Elm is the most universally prized for shade and ornament. No other tree assumes such elegant forms of top, or

WHITE ELM.

presents such graceful spray as this, and few are more cosmopolitan in regard to soil and culture. Notwithstanding the familiar acquaintance which nearly every one sustains with this noble tree, it is very commonly confounded with two other native and less valuable species. It is important, therefore, that the difference between these species be known.

Ulmus Americana, the common Elm which is distributed throughout the Northern States, is known under a great variety of names. It is so variable on different soils that farmers often recognize two or three different kinds, and regard these kinds as distinct from each other as the Slippery Elm is from the *Ulmus Americana* itself. Trees which grow on rather high land, in exposed places, producing good timber, are usually known as White or Rock Elms, although both these names are often applied to *Ulmus racemosa*. The perplexity surrounding the common names of our Elms, is proof enough of the imperfect knowledge concerning them. The only term which appears to be infallibly associated with one species is "Slippery," which is applied to *Ulmus fulva*.

Our three species of Elms are never more easily distinguished than in winter and spring. The buds of the common White Elm, *Ulmus Americana*, are long and smooth. Those of the Red or Slippery Elm, *Ulmus fulva*, are short and hairy, while the corky bark and peculiar habit of the Cork Elm, *Ulmus racemosa*, at once distinguish the species from both the others. Everyone is familiar with the peculiar though various forms of the White Elm. The spray of the Red or Slippery Elm is stiff and struggling, never assuming the graceful sweep or droop of the White Elm. Its top is loose and not well filled out. The Cork Elm grows very slowly and the dark ridges of cork along its branches give it a stunted appearance. It usually retains its main trunk something after the manner of the Firs, and sends off stout horizontal or slightly inclining branches.

In outline of leaf the three species are not strikingly different. The leaves of the Cork Elm usually taper more abruptly at the apex than do those of the other species. When young, the leaves of the Red Elm are downy, but the upper surface soon becomes harshly rough.

The fruit affords decisive distinctions. That of the White Elm is small, and hairy on the edges. That of the Cork Elm is larger, more hairy, thicker, with a sweet and nearly edible meat. The fruit of this species may be compared to a Pumpkin seed. The Red Elm fruit is variable in shape, but is usually nearly circular in outline, as in the figure, and it is always smooth on the edges.

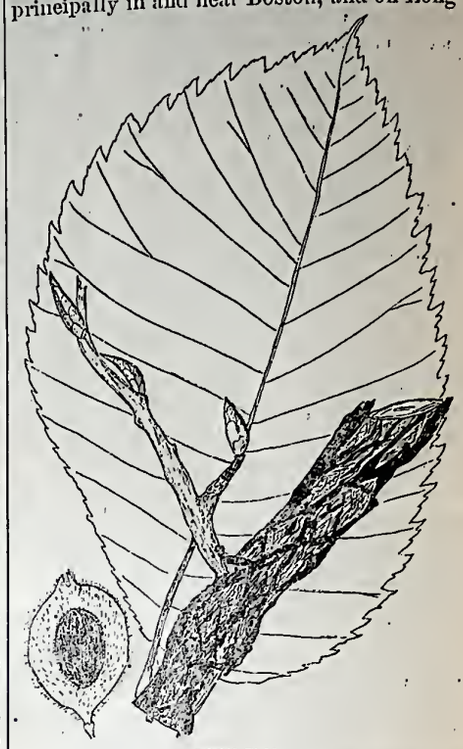
The wood of the Red Elm is dark colored, soft, and straight grained. In this last character it is distinguished from both the other species. The wood of the Cork Elm is tough and very elastic.

For ornament the White Elm is superior. The Red Elm grows rapidly and takes well to different soils, but its habit is too stiff and unsymmetrical to allow of any considerable use as an ornamental tree. The Cork Elm is decidedly picturesque. Those who do not know the tree, however, generally take it to be a stunted and diseased White Elm, and

SLIPPERY ELM.

their impressions are therefore unpleasant. I have never yet seen a person, other than a botanist, who recognized any permanent distinction between this and the White Elm. The Cork Elm is a very slow grower. I have never known a tree above 30 inches in diameter. I should recommend the use of the Cork Elm more as a curiosity to be planted at some distance from the house, than as an object of ornament. The tree is perfectly hardy throughout the North; indeed, it attains its greatest perfection north of latitude 43°. In eastern extension, both this and the Red Elm barely reach New England.

The English Elm, *Ulmus campestris*, which was early introduced into this country, and extensively planted in the Eastern States, principally in and near Boston, and on Long



CORK ELM.

Island, is a lofty tree of less spreading habit than our White Elm, the general form of its head being more inclined to be pyramidal. As a shade tree it is more compact and dense in its foliage, which makes it more suitable in the formation of masses or groups.

L. H. Bailey, Jr.

LAWN RAKINGS.

The Yellow-wood, *Cladrastis tinctoria*, is one of our prettiest native trees. It reaches its northern limit on the Ohio, but is hardy as far north as Boston. Its flowers are pea-shaped, white, sweet-scented, appearing in June in great profusion, in long, drooping racemes, completely covering the tree.

The length of the intervals between the cuttings of the lawn cannot be definitely stated, as the growth of grass varies according to the condition of the weather. In a damp, growing season it should be mown once a week at least, while in very dry weather it may remain unmowed for two weeks.

When we think of the great variety of our native trees, says a correspondent of Vick's Magazine, it would seem that there is no proper reason why they should not be numerously represented on large grounds, and especially on the grounds of public institutions, which are often ample for the purpose. The value of these trees in their ornamental aspect is sufficient to warrant a considerable effort to procure and plant them.

The difficulties attendant upon procuring many species of native trees is a valid excuse for their disuse on private grounds. But a far greater variety is obtainable from nurserymen than is generally employed.

Foreign Gardening.

AN ENGLISH JAM FARM.

It is well known that the planting of fruit trees exclusively in orchards, as so commonly practiced in this country, says A. S. Fuller, has always been discouraged by the land owners of Great Britain. There are some counties in England that have been noted as excellent fruit regions for the past 500 years or more, but, as a rule, the owners of large estates have encouraged the raising of grain and meat to the exclusion of articles like fruit, which are usually looked upon as luxuries instead of actual necessities. But the great progress in fruit culture in the United States, and the annual shipment of green, dried, and preserved fruits to English ports, has had a beneficial effect upon our English cousins, and some land owners have for several years been encouraging the planting of fruits on an extensive scale.

In the Pall Mall Gazette is an interesting account of "Lord Sudeley's Jam Farm," which now comprises 285 acres of arable land, near Toddington. The fruits planted consist mainly of Plums, Raspberries, Gooseberries, and Currants: 40,000 Plum-trees have already been planted. Of Strawberries five tons were gathered in one day last season; 300 pickers are employed during the busy season, and all the fruit goes to a jam factory near by. The proprietors use all the fruit raised on the farm mentioned, and purchase from small farmers and gardeners in the neighborhood. At this factory the bottles used in a year cost about $5,000.

The land upon which this fruit farm has been established, required a great deal of preparation before it was ready for the trees and bushes, such as draining, leveling fences, burning of clay, planting hedges for shelter, etc. In addition to the inside hedges planted to protect the small fruits from cold winds, we are informed that the entire farm is surrounded with a row of Canada Poplar (*Populus Canadensis*). If such screens and hedges are needed in the comparatively mild climate of England, they would certainly be beneficial in most localities in our Northern States.

Another adjunct to this Jam Farm worthy of note is the addition of an apiary. It has long been claimed that the setting of fruit is greatly assisted by the visits of bees to the blossoms, and in England it is said to be especially true with Plums. This apiary consists of 165 hives, under the management of an experienced apiarian, who thinks that under fair treatment and in favorable seasons he will obtain from 40 to 50 pounds of honey from each hive annually.

GREENLAND VEGETABLES.

One should hardly expect that any cultivated plants could be grown in so high a latitude, yet, according to the statement of Dr. Rink, some of the attempts that have been made in Greenland to raise vegetables have been tolerably successful.

At the Danish station of Godthaab (latitude 64°), close to the open sea, Turnips, Radishes, Lettuce and Parsley are almost the only plants that can be cultivated with any success. The Turnip, indeed, requires a favorable summer to produce anything like tolerable specimens. The Cabbages are scarcely worthy of the name, but at two island stations up the fiord, about 30 miles north of Godthaab, the climate is strikingly different. Here, Turnips always come to perfection; Carrots prosper well, and attain a fair size; and Cabbages, though unable to develop thick stalks, yet produce tolerably large leaves, which the provident Danes stow away for winter use.

Attempts have been made to cultivate Potatoes, but the tubers never attain a size larger than marbles, and are only grown and eaten as curiosities. Under the most favorable circumstances green Peas only produce shells, in which the Peas are barely recognizable. This is within the Arctic Circle, or at least on its immediate borders. In South Greenland—the site of the old Norsemen's settlements—horticulture is practiced under more favorable circumstances. At some of the posts, in about the same latitude as Christiana, good Carrots have been produced, and in a forcing frame, Strawberries have grown well and yielded fruit for several years, but they afterward died, owing probably to the severity of the climate.

At Julianshaab Turnips often attain a weight of more than half a pound, and are fit for the table in the middle of July. Radishes are fit to be eaten in the middle of June. Rhubarb grows pretty vigorously, and can be raised from seeds. Green Cabbage attains a good size, but never the normal taste and pungency of the vegetable. At Jakobshavn, in 69°, 13 m., Dr. Pfaff used to raise a few Radishes, and the locality being sheltered, the tiny patch of earth on the rocks, which in that remote place passed for a garden, produced "crops" almost as luxuriant as Godthaab in the south.

THE NEW SOUTH WALES NATIONAL PARK.

The Government of New South Wales have followed the example set by the American people in reserving the Yellowstone Park as a ground to be kept forever in its pristine state. The Australians have resolved to preserve one of the finest and most picturesque portions of the colony for a national park. The latter is situated in the Illawarra district, and embraces an area of 36,000 acres, having a frontage of 7½ miles to the Pacific Ocean. The park generally may be described as high table land, from which at numerous places excellent and extensive views are obtained of the ocean, Port Hacking, Botany Bay, Sydney, Randwick, etc., with deep gorges and rich flats, covered with beautiful foliage, bordering running streams of the purest fresh water. The high table lands, to some extent, consist of the comparatively barren, stony heaths, and of fair to good land, the latter in areas suitable for formation of recreation, review, and encampment grounds, or of plantations of ornamental trees, etc., and readily accessible, situated at elevations of from about 350 feet to about 900 feet above high water mark.

The valleys of the principal water courses, notably of Port Hacking River and Bola Creek, are to a large extent covered with rich foliage, including Cabbage-tree and Banyalo Palms, Tree-ferns, Christmas Myrtle, and other handsome shrubs, numerous large, well-grown Blackbutt, Woolybutt, Turpentine, and other noble forest timber trees, rising at the part southerly and southeasterly above the confluence of Bola Creek with Port Hacking River, to heights up to nearly 200 feet, and bordering and adjacent beautiful streams, having occasional long reaches of deep, shaded, pure, cool, fresh water. The park will be made easily accessible from Sydney by the Illawarra Railway, now in course of construction, which will traverse a considerable portion of what may be regarded as one of the finest public recreation grounds in the world.—*Scientific American.*

CHINESE GARDENING.

A correspondent of Vick's Magazine gives an interesting account of how a Chinaman gardens in Georgia. He says: After Ah Yut Sing had procured his seed of Cabbage, Tomato, Melon, Cucumber, etc., he immediately began his process of preparing them for the soil. His experiments with each of the above named seed were truly interesting. For one week before he planted them in his carefully prepared mellow soil, he subjected them to a curious process of soaking and bathing in a liquid made with water and the sweepings of the fowl house. He would carefully separate each variety of seed into parcels and suspend them in a glass vessel (candy jar) that was half-filled with this liquid, and pains would be taken not to let the seed touch the liquid, and he would let them remain for six or seven days, when they would be swelled to twice or three times their usual size; then they were planted.

His vines of Cucumbers, Tomatoes and Irish Potatoes seemed to be his pets, and were planted under the eaves of the house, where the rain water would have fallen upon them if the wily Celestial had permitted it, but such was not the case. He had constructed a tin gutter, made of thrown away oyster cans, which conveyed the water to barrels, where he wanted it for laundry use, and not to fall upon his bed of vines. But this tin gutter served a double purpose; when the vines had begun to run, small holes were punctured in the tin gutter and a mixture of water and fowl dung was placed in the gutter, and a gradual dripping which descended into the midst of the vines made them grow like "wild-fire" and produce fruit abundantly. A trellis was made of twigs for the vines to climb upon, and by this process the amount of Tomatoes, Cucumbers, Squashes and Melons that were grown was miraculous. The vines were the largest, the healthiest, and most fruitful of any we have ever seen.

His vegetables commanded a premium in the market, and were noted for their size, flavor and freshness. But Ah Yut Sing was too economical to eat the fruit of his own labor; he would sell his choice vegetables to the epicures at a nice figure, and buy the stale unsold lots that were offered at a discount in the market.

SHRUBS IN POTS.

Hardy shrubs in pots are frequently used in England for indoor decoration and the ornamentation of balconies, verandas, etc. They withstand a great amount of harsh treatment, and a good, healthy shrub is certainly more ornamental than a sickly, tender plant.

Exhibitions & Societies.

AMERICAN INSTITUTE FARMERS' CLUB.

The Club's spacious, well-lighted, and cheerful new meeting room at Clinton Hall was inaugurated on the 18th of June, with a highly interesting and enjoyable exhibition of Strawberries, Roses and other flowers and plants. The unusual lateness of the season prevented growers from the Hudson River region and Connecticut participating as largely as they would have done had the season been earlier. As it was, northern berries were only beginning to ripen, and the chief exhibits came from New Jersey.

J. T. Lovett, Little Silver, N. J., was awarded the first premium for the best collection of twenty-five varieties, and many other first premiums for single quarts.

E. & J. Williams, Montclair, N. J., exhibited a remarkably choice collection of single quarts and received several first premiums.

The center of attraction, however, were the new varieties, many of which were of rare excellence and great promise. E. W. Durant, Irvington, N. J., competed with his new Cluster King, King of the North, and others. Wm. Parry, Parry, N. J., had in addition to his Parry, Lida and Bomba. J. T. Lovett showed Parker Earl, a new variety of great promise. P. M. Augur & Son made a splendid display with their Jewell, of which both berries and plants in bearing were shown. This variety competes also for "THE AMERICAN GARDEN Prize." As the conditions required the judges to examine the plants and fruit on the ground, the prize for the best new seedling has not yet been awarded. P. Henderson & Co. showed a plate of "Henderson," but owing to the very unfavorable season, the sample did hardly justice to this new variety.

The first prize for the best flavored variety was awarded to Prince of Berries.

The exhibition of Roses was one of rare excellence and beauty, seldom equalled in New York. All the best new and old varieties were represented; especially noteworthy were Gen. Jacqueminot, Mad. Victor Verdier, Baronesse Rothschild, Paul Neron, Captain Christy, Comtesse of Oxford, Senator Vaisse, Prince Camille de Rohan, La France, Sunset, La Rosiére, Anna de Diesbach, Moss Rose cristata, and centifolia, etc.

Schultheis Bros., College Point, N. Y., were awarded the first prizes for collections and many single varieties. This firm deserves special recognition for renewing their entire exhibit on the morning of the second day, making in fact a better display than on the first day.

J. G. Rechamps & Son, New York, carried off most of the second prizes for collections.

Albert Benz, Douglaston, L. I., made a remarkably fine exhibit of single varieties for which first prizes were given. The Gen. Jacqueminots and various Moss Roses elicited the admiration of all.

Beautiful Orchids are not a rare occurrence at New York flower exhibitions, but the exhibit of Mr. Wm. C. Clement, gardener to Mrs. Chas. Morgan, on this occasion did certainly excel any similar collection shown here. It would have been worth a considerable journey to see these Orchids alone. The actual cost of the plants in this exhibit was over $10,000. A *Lælia elegans alba*, for which was awarded the first prize, had sixteen immense flowers and was a model of vigor and good culture. Among the most striking specimens of the collection were: *Cattleya gigas regina*, *C. aurea*, *C. Mossiæ insignis*, *C. Wallichii*, *Odontoglossum vexillarium*, *Oncidium flexuosum*, *Lælia majalis*, *Cerides virens*, *Cypripedium niveum*, *C. Lawrenceanum*, *C. Selligerum majus*.

Another fine collection of Orchids for which a second prize was awarded was shown by W. C. Wilson, Astoria, N. Y.

Richard Brett, gardener to James R. Pitcher, Shorthill, N. J., exhibited a gorgeous collection of Peonies, some sixty named varieties, comprising every imaginable shade of color and variety of form possible in this class of plants. Mr. Pitcher in making a specialty of these somewhat neglected flowers, is doing a good work, showing their grand capabilities.

Hallock & Thorpe filled nearly an entire table with a miscellaneous collection of Gladiolus, Lilies, Irises, Peonies, Chrysanthemums, etc.

The most striking exhibit in regard to decorative effect was John Finn's collection of Palms, comprising some two dozen specimens, most of which were of rare excellence.

Mons. Jules Lachaume, Director of the Garden of Acclimation of Havana, Cuba, showed a highly interesting collection of new textile fibers of Palms, Yuccas, and other tropical plants, some of which, he is confident, will become powerful rivals to wool and cotton even, as their supply is almost unlimited.

The semi-monthly meeting of the club was held on the same day of the exhibition. The subject for discussion being "The Strawberry," a large number of prominent fruit-growers participated. Among those present were Rev. E. P. Roe, Judge Wm. Parry, A. S. Fuller, W. C. Barry, Chas. A. Green, P. T. Quinn, J. S. Woodward, Col. M. C. Weld, P. M. Augur, J. T. Lovett, E. W. Durand, Dr. J. B. Ward, E. Williams, Sam. Parsons, J. B. Rogers, C. W. Idell, E. D. Putney.

GREATER CONSUMPTION OF FRUITS NEEDED.

Read by E. Williams before the American Institute Farmers' Club.

If I could wield the pen as easily and gracefully as some of my contemporaries of bygone years, and had written a book on Strawberry culture, or on success with small fruits, or on fruit culture for profit, or on its failures and losses, I should probably long since have received my diploma and graduated into the editorial chair of the "Bungtown Fruit Grower," or taken charge of the Agricultural Department of some prominent weekly paper, in which case I should no doubt find, as many others have done "who have gone before me," that the *profits* of fruit growing were very alluring on paper, and that the pen, pencil, and printer's ink were the chief implements used to produce these profits.

For a change I would suggest that some of these ex-fruit-growers would write a book on "Failures in Fruit Growing;" not their own failures, we could hardly expect them to overcome their modesty sufficiently to perform such a task. But to record the failures of others would be an easy matter, and the wrecks and blasted hopes that have lined the shores of the horticultural world during the last twenty-five years, afford abundant material to make a work of interest, a fitting companion to "Fruit Growing for Profit."

Occasionally we find a person who has become "well fixed" in life, recount some little incident of failure in his past career with a laugh, but references of this kind are confined to this class, they can afford it. But people who fail in business of any kind, do not as a rule like to think of their mistakes, much less talk about them, and yet these failures and the causes thereof could teach more important lessons than all the successes on record, but they seldom are made public. It is the successes that are wanted for record, not the failures, and these successes on paper are often false lights on the shore, luring the unsuspecting and innocent traveler onto the rocks and shoals that lie hidden beneath the surface.

But success in Strawberry or other fruit growing, as already stated, is not confined to growing the crop, but includes the selling of them, and here is where the failures and the most important ones occur. What profiteth it a man if he gain the whole crop and lose the whole market? In most recorded successes of large crops it is the prospective returns and profits that are the alluring feature held out to view. The profits of fruit culture are what we are all contending for, and which I am sorry to say, are "often sought but seldom found."

Last season first-class berries in fine condition, and plenty of them, sold in this city for 10 and 12 cents per quart, with poorer grades for one-half the money. Now deducting freights and commissions, what is there left to pay the grower for his time, labor, fertilizers, baskets, crates, picking, etc., etc.? The most powerful magnifying glass would fail to detect the grower's profits.

Now it will be said this is all owing to a glut in the market, over-production, etc. Well, in a measure this may be true. But for all that we need a new departure. Instead of encouraging greater production, let us encourage greater consumption. Let our efforts be directed to the educating of the people to consume more fruit, to make it a daily, generous diet. Let us teach the masses, the working classes, that a generous diet of ripe fruit is better for their health and the health of their families, more cooling and refreshing to the system than beer and other stimulants of like nature. Fruits are more nutritious than most vegetables, more than half as valuable as potatoes; pound for pound, they are fully as valuable in connection with meats and carbonaceous food for health and comfort.

Let us try to teach the people that they can afford to buy and consume fruits in much larger quantities, even at higher than average prices. This will benefit themselves as well as the fruit growers, and contribute largely to make fruit growing and fruit eating a successful and profitable business.

I entreat all true fruit growers and fruit lovers not to hold out the alluring temptation of profit to be derived by the prospective grower from certain new varieties, that they may be able to sell the plants; but instead to encourage greater home consumption, which with many will be found the most profitable part of the business.

AMERICAN NURSERYMEN'S ASSOCIATION.

The tenth annual meeting of this association convened in Chicago June 17-19, with nearly 250 members present from all sections. President Edgar Sanders in his annual address said that the tendency of the age is toward associations to modify and control output and prices. With capital this is called monopoly; with labor, amalgamation. An association like this is bound to be beneficial. He advised the readers of papers to make them as short as possible, and leave a chance for free discussion. He showed that nurserymen and florists had much in common, but stood on a different plane as to their methods and wants, consequently separate associations and joint conventions were alike to be commended. He argued that the "tree agent" is a necessary evil, and not so much of an evil after all.

G. H. Miller of Ohio in a paper on "Nurserymen as Teachers of Horticulture," dwelt on the great improvement in methods. He held that it was the duty of nurserymen to educate the masses in horticulture. Homes, school-houses, churches, gardens, plots, and parks would be greatly beautified if people had an elementary knowledge of floriculture and horticulture. Every horticulturist should have experimental grounds for testing new varieties and otherwise keeping himself abreast of the times.

J. Jenkins of Ohio had found it more remunerative to pay skilled than unskilled labor in his nurseries. Several speakers were of the same opinion, but one or two thought a skilled foreman was enough. All agreed that to have skilled men, a training in boyhood is necessary. Men so trained always command good salaries.

Mr. Jenkins thought nurserymen were behind the times in the matter of labor-saving implements, and described several useful implements of his own invention.

N. H. Albaugh of Ohio read a paper on budding and grafting. For success in budding, stocks must be healthy, hardy, and of good size. Rich black loam is not the best; a friable loam, with liberal applications of barnyard manure, is better. Whole stocks should be used in budding, and whole roots in grafting. Cuttings do for Grapes, Currants, Gooseberries, and the like, but are not the natural manner of tree propagation. He thought growing on whole roots paid better in the end than growing on cut roots.

M. A. Hunt of Wright's Grove, Chicago, pointed out the comparative advantages of steam and hot water heating, and showed that by practical experiment steam had been the more successful. Its advantages lie especially in economy of fuel, rapidity of action in the regulation of the temperature, and cheapness of construction.

The transportation problem was the subject of a general informal discussion. It was held that shipments by nurserymen do not receive due attention and care. A. J. Caywood of New York thought there was no way to bring soulless corporations to time except by litigation. Moral suasion might be very good, but when damage or delay occurred process by law would be his method. Some of the members thought the railroads would be willing to meet the wishes of the shippers if they only knew how, and erred mainly through ignorance.

The Committee on Transportation was instructed to inquire into the question of express and postal charges on plants and seeds, with a view to getting lower rates.

On Thursday afternoon a delightful excursion on the lake was given the members through the courtesy of Messrs. Lord & Thomas, the enterprising Chicago advertising agents.

Reports on the condition of the trade showed stocks to be in good order with some increase in the supply, and business fairly prosperous.

It was resolved that the next annual convention be held at Washington, D. C., and the following officers were chosen for the coming year: President, Norman J. Colman; vice-president, Franklin Davis, Baltimore, Md.; secretary, D. W. Scott, Galena, Ill.; treasurer, A. R. Whitney, Franklin Grove, Ill.; executive committee,—George B. Thomas, West Chester, Pa.; S. D. Willard, Geneva, N. Y.; C. L. Watrous, Des Moines, Ia.; second vice-presidents: Alabama, W. F. Heikes; Ark., W. E. Thomas; Cal., C. W. Reed; Col., D. S. Grimes; Conn., Edwin Hoyt; Dak., L. Preston; Del., Randolph Peters; D. C., William Saunders; Fla., A. J. Bidwell; Ga., U. S. Sanford; Ill., J. B. Spaulding; Ind., John Freeman; Ia., Silas Wilson; Kans., J. W. Latimer; Ky., R. W. Downer; La., N. K. Klingman; Me., Thomas Jackson; Md., William Corse; Mass., J. W. Manning; Minn., S. M. Emery; Mich., L. G. Bragg; Miss., W. H. Caswell; Mo., J. M. Boyles; N. J., J. T. Lovett; Neb., J. F. Allen; N. Y., George G. Atwood; N. C., J. Van Linley; Ohio, S. D. Bair; Ont., E. N. Morris; Ore., C. Dickinson; Penn., Abner Hoops; Tenn., A. W. Webber; Texas, J. R. Johnson; Va., E. H. Bissell; Wis., George P. Peffer; Wash. Ter., A. H. Salmon.

AGRICULTURAL CONVENTION AT WASHINGTON.

This convention, previously announced to meet in June, has been postponed, as will be seen by the following letter:

Dear Sir: A sufficient number of favorable replies having been received to my last circular, to indicate a decided preference for the date of July 8th for holding the Convention of Agricultural Colleges and Experiment Stations, I have to inform you that such date has been finally determined upon. This will not only not conflict with the commencement exercises of many of the Colleges, but will also offer to those desiring to attend the Convention of the National Educational Association at Saratoga on July 14th, an opportunity to attend both Conventions without too much loss of time. I am endeavoring to perfect an arrangement with the Pennsylvania Railroad Company by which all those arriving here by that line can have reduced rates to Saratoga.

NORMAN J. COLMAN,
Commissioner of Agriculture.

AMERICAN POMOLOGICAL SOCIETY.

The forthcoming meeting Sept. 9, 10, 11, of this society is already creating a lively interest among the people of Michigan. The State Horticultural Society, the Farmer's Club and all other societies of this class will combine, says the Grand Rapid Times, and make an exhibition that will bear a national reputation. The State Legislature appropriated $1,000 by a unanimous vote.

Aside from the display of fruits, etc., a number of interesting papers will be read by the highest authorities in the country. These lectures will be given in the form of popular addresses and will be profusely illustrated. The necessity of a large hall is in this instance plainly demonstrated. The Army of the Cumberland meet the week following the Pomological display, and it is proposed that the two organizations combine forces and erect a temporary building large enough for the use of both.

AMERICAN SEED TRADE ASSOCIATION.

At Rochester June 9-11, some 30 or 40 seedsmen met in convention and discussed topics of great interest to the trade. Many large houses were not represented at all. Those present showed marked enthusiasm in the progress of the seed business. A noticeable event (?) was the absence of discussion on any phase of the seed-growing or improvement of varieties. It is proposed, we understand, to have papers by specialists next year that will discuss the progress of knowledge in this important agricultural industry.

The excursion on the lake and entertainment by the Rochester seedsmen was highly enjoyable, and reflected credit upon the liberality of the entertainers. The committee of arrangements, Messrs. Vick, Morehouse, Chase, Crosman and Mandeville, won pleasant remembrances from all the company.

CARE OF GOLD-FISH.

The cause of fungus growing on gold-fish, says Seth Green, is that the slime or scales of the fish have become rubbed off, either by handling or some other means. If you wish to move your fish from one vessel to another, you should use a net made of some kind of thin, soft material—mosquito netting or an old veil will answer. They should never be taken in the hands. You may not have handled them, but some one else may have done so, either before or after you purchased them. The only cure I know of for the white fungus, is to make a strong brine of common salt and put the fish into it for a minute or two, then immediately put them back into fresh water. Do this three times a day. If you commence doing this when you first discover the fungus growing on them, you will sometimes cure them.

When you have healthy fish, keep them well by changing the water every time they come to the top and keep opening their mouths, and seem to be breathing more air than water. When you change the water do so by taking about one-half out at a time and replacing it with fresh—a full change is very apt to prove injurious. Give them plenty of food, such as angle-worms, or any kind of insects, or fresh meat cut into small pieces; fish-wafer is also good. They should have a change of food every week or so.

Without frequent mowings a lawn cannot present a velvety, attractive, and finished appearance.

To have Lilacs bloom plentifully every year, the flowering stems should be removed as soon as the blossoms have dropped, and all suckers should then be cut off leaving only a few clean stems.

Rural Life.

COUNTRY SMELLS.

If the most delicious of country smells belong to the summer and autumn, making a climate for themselves of our gardens and orchards, the most delicate are the birth of spring, and are wild and coy as a mountain nymph. Is there any epoch in the annals of a country year like the advent of the first wild-flowers? The first snow is an event of dubious delight, except to the boys; and the first Asparagus and Pie-plant from our own garden is comparatively a gross enjoyment. But the first spring day on which we come home with a sprig of Trailing Arbutus or a bunch of pale or purple-eyed Hepaticas, or only a handful of Saxifrage or Anemones, is the real jubilee of the year: and their fragrance, as unobtrusive as themselves, is the "still small voice" of a new life of nature. It is the perfume tolled from the "floral bells" of the early wildflowers, which really rings "the old year out and the new year in." And the day when little Bess comes in with a clump of Violets in her chubby fist makes us all children again.

The first Red Clover is a little sunrise. Nothing in nature gives me a more blessed sense of "the wideness of God's merey" than the way He has sown the earth with these bright and balmy flowers of the grass, "like the wideness of the sea." And I am as thankful for the exquisite scent of the White Clover as the bees are for its honeyed store. The Sweet Clover, too,—it grows along the railway embankments here for miles, whitening them with its feathery blossom, and filling the atmosphere with an almost oppressive fragrance when the grass is cut.

As the summer advances the earth becomes surcharged with heat and sighs out its relieved heart in shady places and by streams of water or in swampy and meadow lands, like some naiad or water-nymph escaped from the hot pursuit of Pan or Apollo. And at night when the citizen is conscious only of the radiation of the day's stored up heat from the paving-stones and bricks, the air which floats in at my window, or surrounds me as I walk like the cloud with which Athené enveloped Diomed, is aromatic with the exhalations of the cool, clean earth (it is a great mistake to confound the earth with *dirt*-iness), and with the breath of the Honeysuckle at the porch, the Pine-trees on the ridge, and the fine grass which the mower left upon the lawn at sundown. It was in the night that "the soul of the Rose" went into the blood of Tennyson's hero-lover, and

> "The Lilies and Roses were all awake,
> For they sighed for the dawn and thee."

And so in the mimic twilight of the woods in the hot midsummer. The very essence of the country to me is in its *woodsy* smells. There may not be more tonic in them than in those of the seashore, but they are more highly medicated. My "mind diseased," as well as my body dyspeptic, responds to the first warm, aromatic gush that greets me as I pass the "woody hollows" in a drive, or step into the balmy shadows of the Pine grove. An invalid friend, who went every summer to Saratoga with much benefit, used to insist that it was not more the Springs than the Pine woods (this was before the surrounding country had been "improved" into sandy barrens), which made it the sanitarium it is. And more than once have I lain under the solemn and spicy trees with him, drinking of a water of life which no "Congress" or "Columbian," hot or cold, could furnish at ten cents a glass.

There are two varieties of woodsy smells. One is dry, warm and aromatic, pervaded by the delicate emanations of leaves and wood, or redolent of Wintergreen, wild Grape or Sassafras, the pungent Pennyroyal or the thuriferous Pines, Hemlocks and Cedars. The other is merely that of cool, moist ground, damp leaf-mold and decaying wood and earth-breathing Fungi. These latter, doubtless, are not the spots for camping out, but I confess to a liking for them. When I catch even a whiff, as I pass along the wooded road or cross a bridge over a woodland stream, I seem to have got a deeper breath and a more soothing touch of Mother Earth than anywhere else. I smell to-day (with the organ of memory) the black mould of a swampy forest through whose paths, bordered by canals full of a wine-colored water, I walked to school in my small boyhood. It is an annual necessity for me to get the genuine greenwood smell, brewed only in the confined still-room of the woods; and I am conscious of a virtue passing into my jaded nerves, as soon as I have inhaled the first steamy gush of its frankincense and myrrh.

I think that the ethical idea is more predominant over the merely æsthetic in this one of the senses than in any of the others. How naturally does the poet say that the actions of the just "smell sweet," as well as blossom, in the dust. Old Jacob showed his knowledge and love of Nature and God alike, when he spoke of "the smell of a field which the Lord hath blessed." Its religious associations are primeval and universal. Fragrance is everywhere the emblem, if not the instrument, of worship. When His people offer Him a pure offering, Jehovah "smells a sweet savor." The poet thus addresses the flowers:

> "Ye matin worshippers! who bending lowly
> Before the uprisen sun, God's lidless eye,
> Throw from your chalices a sweet and holy
> Incense on high!
>
> "'Neath cloistered boughs each floral bell that swingeth,
> And tolls its perfume on the passing air,
> Makes Sabbath in the fields, and ever ringeth
> A call to prayer!"

—*Dr. F. N. Zabriskie in Christian Intelligencer.*

DRY HOUSES AND HEALTH.

At a recent convention of the Michigan Tile Makers, Prof. R. C. Kedzie related the following incidents in evidence of the importance of selecting a dry situation for a residence:

Two brothers in Vermont, of strong and vigorous stock, and giving equal promise of a long and active life, married wives corresponding in promise of future activity. They had both chosen the healthiest of all callings —farming. One of the brothers built his house in an open and sunny spot where the soil and subsoil were dry; shade trees and embowering plants had a hard time of it, but the cellar was dry enough for a powder magazine. The house in all its parts was free from every trace of dampness and mould; there was a crisp and elastic feel in the air of the dwelling; the farmer and all his family had that vigorous elasticity that reminds one of the spring and strength of steel; health and sprightly vigor were the rule, and sickness the rare exception. The farmer and his wife, though past threescore, have yet the look and vigor of middle life.

The other brother built his house in a beautiful shady nook, where the trees seemed to stretch their protecting arms in benediction over the modest home. Springs fed by the neighboring hills burst forth near his house, and others by his barns; his yard was always green even in driest time, for the life blood of the hills seemed to burst out all about him in springs and tiny rivulets. But the ground was always wet, the cellar never dry, the walls of the room often had a clammy feel, the clothes mildewed in the closets, and the bread moulded in the pantry. For a time their vigor enabled them to bear up against these depressing influences; children were born of apparent vigor and promise, but these, one by one, passed away under the touch of diphtheria, croup, and pneumonia; the mother went into a decline and died of consumption before her fiftieth birthday, and the father still lives, but is tortured and crippled by rheumatism.

PLANT TREES.

There are portions of every farm, not well adapted to cultivation of the soil, where trees will grow if permitted, says H. N. Howard, in the National Farmer. In the clearing up of new farms, instead of the wholesale, sweeping destruction of all forest trees, there are always certain spots where trees may be left where the soil is not worth the trouble of cutting off the timber, and where the timber, if left to grow, would remain a source of profit and income.

On all old farms there are also spots which the plow never reaches, but which, if planted in trees, would reclaim something lost. The rich, alluvial pastures of every farm are best utilized by tilling the soil, while the more sterile portions are more useful for the growth of fruit or forest trees. Such alternation of forest and field is economy of space; it enhances the artistic beauty and picturesque effect of farm scenery. Small fields, amidst forests, are always found everywhere more fertile, other things being equal, than large, open fields without forests. In fact, this system of field and forest is more economical, more picturesque, more gratifying to the senses, and more healthful to man and beast. The farmer who adopts such systems will be regarded as a national benefactor, and will create to himself lasting monuments. Plant trees!

BUMBLE-BEE AND SMALL BOY.

> Soon will the festive bumble-bee
> His little carol sing,
> And polish up right carefully
> His merry little sting.
> Soon will the small boy seek the wood
> To climb his favorite tree,
> And in a happy, careless mood
> Pursue that self-same bee.
> Then will that billhesome bee in turn
> Cause that same boy to send
> To where he can relieve the burn
> By plastering with mud.

Miscellaneous.

SUMMER STYLES FOR FLOWERS.

The majority of the flowers sold at the watering-place hotels are sent from New York; Newport is the only exception, there being so many handsome gardens there, and large floral establishments.

Each of the prominent watering-places has its own peculiar styles in flowers to wear, and to decorate with, every season. White flowers are worn at Newport almost to the exclusion of colored ones, and yellow blossoms are the fashionable tint for some this summer. A few white Mermet Roses are worn and are greatly admired. These are grown in Summit, New Jersey. White Moss Rose-buds, and the hybrid Merveille de Lyon, are popular.

SARATOGA FASHIONS.

At Saratoga Sweet-pea blossoms are the favorite flower. These, made up into the daintiest *bouquets de corsage*, and into pretty designs of colored straw, are sold on the great balconies mornings and evenings. It is said that one family in the suburbs support themselves the entire year by growing Sweet-pea blossoms for the summer trade. Pink and blue Water-lilies are sent from Boston to Saratoga daily, and sell for large sums at a stand near Congress Spring.

LONG BRANCH FASHIONS.

At Long Branch, Larkspur is the flower most in vogue. It is both blue and pink and combined with Mignonette makes a beautiful belt bunch. In the corridor of the West End Hotel there is quite a flower show each evening before dancing begins in the drawing-room. Large floral designs are sent from New York and are either sold or raffled. Very rich hand-bouquets of pink Roses fringed with Larkspur are carried to the meetings on days of the races: these are fastened to the belt, ribbon or sash which are now fashionable.

Hollywood Park, the residence of Mr. John Hoey, is very attractively laid out this year. Over a million Echeverias have been placed in the carpet beds, and the blaze of Coleus is dazzling.

LONG BEACH.

This summer resort is not behind the other watering-places in its supply of flowers. A tastily arranged booth stands in the rotunda of the immense hotel, where there is all the day and evening a beautiful collection of flowers. These are sent from New York morning and night.

A dinner was given at a cottage last week where there was a decoration of sea-grasses gathered in this neighborhood. There were mats of the tangled grasses for all the covers, and a large, oval center of grass was finished at the edge with a row of shells. The favors were Water-lilies.

WINDOW BOXES, ETC.

Although so many persons are out of town this month, the window boxes and vases that ornament the outside of dwellings receive great care and make the fashionable avenues look delightful. On Mr. Wm. H. Vanderbilt's house are 20 window boxes, which are filled with Agaves, Ivy, and Scarlet Geraniums. These are distinct and effective, very much more so than where there is a conglomeration of color. Near the side entrance to the residence is a bed containing a general collection of flowers, among which are several rare specimens of Cactuses. In his conservatory Mr. Vanderbilt has a fine display of summer-blooming Orchids.

The hotels, large restaurants, and Club houses are all making a brilliant show with window boxes, and vases of growing plants. Rhododendrons have this year been set out in the courts of these public places, and when in blossom, were conspicuous and handsome.

The new, shrubby hybrid Calceolarias are a great addition to the borders in public parks: these flowers embrace all the shades of orange, brown, crimson and yellow, and are borne in large trusses: they will bloom the entire season if placed in partial shade. The yellow variety known as "Shower of Gold," is set out freely in ribbon lines in Gramercy Park and spangles the beds magnificently.

ROSES LOSING IN FAVOR.

Mid-summer weddings are remarkable for the absence of Roses in the decorations. Gardenias are the favorite flower apparently. A new double Gardenia, *G. Fortunei*, is large, waxy, and fragrant: it is combined with Orange-blossoms and small Orange-fruit. This is quite an innovation. Light mull dresses, and those made of silk tulle, or illusion lace, are trimmed with garlands of Field Daisies, and bridesmaids carry large, broad-brimmed leghorn hats filled with these flowers and swung together with ribbons over the arm. Gladioluses have entered largely into the wedding decorations: they are very showy and effective in vases. A novelty is a sport from *Gladiolus Colvillii*, "The Bride," which is named *G. Colvillii Ville de Versailles*. The flowerets are exquisitely beautiful, the white sepals being wonderfully pencilled with vermillion, and the throat being stained with pale purple.

ORNAMENTED CARDS.

A very popular occupation for ladies during the summer, is one with a floral turn to it. All kinds of cards of invitation, menu, and birthday cards are ornamented with imported dried flowers and grasses. These are fastened to a corner of the cards with a fine gum paste, in tasteful combinations. It is fascinating work, and very dainty favors are the result, at a moderate cost. These flowers may be applied to satin successfully. A white satin cushion made for a bridal gift, was bordered with the dried white Cape flowers and edged with very fine Grasses.

FANS.

The styles of decorating fans are very numerous and elegant. The choicest flowers are selected to fasten to the fan. Italian straw fans or small Palm leaves will have a large cluster of Roses or spray of Ferns fastened on them with wires. It is quite the fashion to ornament the parasol with a knot of flowers, particularly at the watering-places, where those of gay colors and light material are carried.

FLORA.

J. H. Woodford says that he keeps insects from his Roses by dredging the bushes with hellebore early in the morning, before the buds form, which kills the first insects that come; then again before the bloom, and after blooming. These three applications are sufficient. We prefer "Buhach" to hellebore.

GINSENG CULTURE.

The Ginseng is a valuable plant growing spontaneously in the forests of Kentucky and mountainous regions of other States. Its favorite location is in rich loamy bottoms and on shaded hill sides. The top of the plant is annual, coming up early in the spring, averaging about twelve inches in height, varying according to the age of the root and the richness of the soil. The plant has three compound leaves, the flowers are small yellowish, the berries bright red. Each plant will produce from fifteen to twenty seeds, which when ripe become scattered more or less around the old plant, and each one will send up a little plant next spring which will get its growth in three or four years. The roots are dug and washed clean of dirt and dried in the sun, and usually sell for $1.00 per pound dried, or in the green state at 25 cents per pound.

Ginseng is not cultivated anywhere in this country, but there is no reason why it should not be, as all our cultivated plants grew wild originally, and on being cultivated became improved. I am of the opinion that the Ginseng can be improved considerably under cultivation, like many other plants, although it may require special soil and care to make it profitable.

One fall I had loam from the woods hauled and mixed with one-third stable manure. In the following spring in planting out my Strawberry plants a furrow was plowed, filled with this loam, and the plants set in these rows. In weeding, I noticed small, peculiar-looking plants, but paid no attention to them until I bruised one of them and found they were Ginseng. Most of the plants had the seed still attached to their roots when they were some two inches high.

From this experience I am led to the opinion that Ginseng can be successfully cultivated. The ground should be heavily manured, the soil thoroughly pulverized, laid off in beds, and the seed raked in or sown in drills. The plants will be easier kept clean in drills. The second and third summer the plants will be strong enough to produce seed. The next spring after this, when the plants are up pretty well, the roots which are easiest found then, are to be dug.

Perhaps it may require some shade and virgin soil for its successful culture. I would suggest to prepare a bed in the orchard; the heavy manuring will do the trees good if the experiment with the Ginseng should prove a failure. Manure the soil and pulverize well, and haul from the woods rich loam and spread on these beds or in the drills, and sow the seed. If cultivating the Ginseng will increase its size as much as it does other plants, I think roots can be grown an inch in diameter and a foot long, and a thousand pounds to the acre.

THOS. D. BAIRD.

Most plants show to better advantage when grown in small groups or clumps of one kind than when planted singly and intermixed with many other kinds.

A Kansas man poured kerosene around the stems of several hundred Apple-trees just coming into bearing—"to kill the insects and things." The Live Stock Indicator says "they are now deceased; that is, the trees. Loss, $1,000."

ON THE ROAD.

NOTES BY THE WAY.

After a pleasant two days at Rochester among the seedsmen we paid a visit to Mr. Benjamin Hammond, at Fishkill-on-the-Hudson, to inspect his manufacture of the now famous Slug-Shot. What a name for a destructive agent! Mr. H. began business as a druggist at Mt. Kisco, N. Y. In 1880 a girl came to him and asked for something to kill insects which would not kill her young turkeys. His ready Yankee wit suggested the main ingredients of his Slug-Shot combination, and 20 pounds were made up. This was tried and worked so satisfactorily that the young lady's father next day ordered 50 lbs. more for field use. Mr. H. had at that time been handling about two tons of Paris Green yearly, which so poisoned him that he was made very sick, and obliged to go into bankruptcy. So the new "bug-killer" and turkey-preserver was at once adopted, and the Paris Green discarded for all such purposes. Since that time the article has become generally used, and the demand is increasing rapidly. Partnership troubles compelled him to sacrifice the Mt. Kisco plant, and he took the opportunity to move to Fishkill, where he now makes a specialty of Slug-Shot and cottage paints, having given up the drug trade entirely.

Mr. H. is an honest, bright, hard-working Yankee, and a keen business man. He makes no secret of the ingredients of his Slug-Shot compound, and gives credit to Dr. Hexamer for some of its important features. From what we have learned of the article, we believe it to be efficient, safe and economical.

The Slug-Shot and paint works of Mr. H. are of considerable size and abut upon the dock and railroad. The business has already outgrown the accommodations, and they soon will be doubled in size by additional buildings. L.

CATALOGUES RECEIVED.

John Barth Bros., Overveen near Haarlem. Wholesale Catalogue of Dutch Flower-roots.

Bakker Brothers, Bennebrock & Vogelenzang near Haarlem, Holland. Wholesale Catalogue of Dutch Bulbs.

J. V. Van Zanten & Sons, Hillegom near Haarlem, Holland. Wholesale Catalogue of Dutch Flower-roots.

Peter Van Velsen & Sons, Houtvaart, Overveen, Haarlem, Holland. Wholesale Catalogue of Dutch Flower-roots.

J. T. Lovett, Little Silver, N. J. Announcement of the new "Parker Earl" Strawberry, and general invitation to visit the Monmouth Nurseries during the bearing season.

Peter Henderson & Co., 35 and 37 Cortlandt Street, New York. Summer Price List of Celery, Cabbage, Cauliflower, and pot-grown Strawberry plants; also a list of Turnip seed and garden requisites.

P. Van Der Veld & Sons, Lisse near Haarlem, Holland. Trade Catalogue of Dutch Bulbs and tuberous-rooted Begonias. This is one of the large and reliable establishments of Holland and considering the superior excellence and reliability of the stock sent out the prices seem astonishingly low.

General Bulb Company, Vogelenzang near Haarlem, Holland; represented in the United States by De Veer & Boomkamp, 10 Broadway, New York. Special Wholesale Catalogue of Dutch Flower roots and bulbs. This is an exceedingly valuable list, comprising the cream of the best and most desirable in this line, at very low prices. This establishment, it will be remembered, was awarded all the first prizes for Dutch Bulbs, at the New Orleans World's Exposition.

Ant. Roozen & Son, Overveen near Haarlem, Holland. This Catalogue, intended for gardeners, florists, amateurs, and flower growers in general, contains as complete and choice a lot of Hyacinths, Tulips, Crocus, Iris, Narcissus, Lilies, Amaryllis, Ranunculus, Anemones, and other Dutch and Cape bulbs, and a large collection of miscellaneous bulbs, plants and roots, as can be found anywhere. This house has made a new departure by sending all their goods direct from their establishment to the purchaser, thus saving a considerable amount of money, and avoiding all risks. All orders from the United States and Canada should be sent to their New York house; De Veer & Boomkamp, 10 Broadway.

OUR BOOK TABLE.

Horticultural Directory. Isaac D. Sailer, Philadelphia. Edited by Chas. F. Evans. These gentlemen have succeeded in making an excellent directory, and far more accurate than anything of the sort heretofore attempted. It contains lists of florists and nurserymen throughout the United States, arranged by States, and is very convenient for sending circulars, etc. Supplements A and B contain European lists of similar character. Price $6.00. Supplements $1.50 each.

Michigan Horticulture. Fourteenth annual report by secretary Charles W. Garfield. This elegant volume is at once a treasure and a pleasure, as well as a credit to the accomplished secretary who edits it, to his State and the horticultural profession. If similar reports were published in every large State, the horticultural interests of the nation would develop and increase at an astonishing rate. The number of excellent papers and essays contained in the book is so great that our space does not permit their enumeration.

A Brief of Horticulture in Michigan, which is here embodied, has been referred to in a previous number. But the leading and most unique feature of this report, and the portion that required most thought and study, is the Secretary's Portfolio. In its pages the editor gives a carefully classified selection of the very best things that have been said and written upon horticultural subjects during the year; and, while furnishing readable matter from the best writers of horticultural literature, he aims to make the Portfolio a text-book of horticulture.

ANSWERS TO CORRESPONDENTS.

Late-planted Strawberries.—*G. L., Rockville, Mo.* On dry ground in thoroughly good condition, it will be safe to plant Strawberries up to the middle of November in your latitude. But if the ground is heavy and indifferently prepared it would be better to defer planting till spring.

Labels.—*P. A. G., Louisville, Ky.*—The most durable label for trees and shrubs is made of rough sheet zinc. Writing upon it with an ordinary lead pencil will last a great many years. Such labels may be fastened with a copper wire, or, if cut with a long, pointed end, they may be twisted around small branches.

Asparagus Beetle.—*L. M., Rion, N. Y.*—The larvæ of this insect, if not destroyed, will weaken, if not seriously injure, the plants. Either Slug Shot, or Buhach, will do the work effectually. The powder should be dusted over the plants in the morning while wet with the dew. Two applications are generally sufficient.

Jasminum hirsutum.—*B. H. W., Adrian, Mich.*—This is a near ally of *J. pubescens*, and *J. gracillimum*. It is a native of Borneo, we believe, and has therefore to be kept in a warm house in winter. It comes highly recommended as a winter-flowering plant, being exceedingly floriferous, sweet-scented, and of graceful habit.

Trailing Currants.—*R. S., Penn Yan, N. Y.*—The principal objection to trailing Currants and Gooseberries in the form of trees is that if borers attack the stem, which they are only too likely to do, the entire tree is lost, while in the bush form a branch may be missed without much detriment, and others will soon take the places of those lost.

Myrtle.—*Constant Reader, New York.*—The *true* Myrtle, *Myrtus communis*, is a small tree, native to Southern Europe. There are several varieties of it, all handsome. It is not hardy here. It should be planted in tubs, and during winter placed in a cool cellar. The plant which you refer to in your letter that is commonly called Myrtle, is the Periwinkle or Creeping Myrtle, *Vinca minor* a native of Northern Europe, and perfectly hardy in our climate.

About Aquatic Plants.—*H. W., Philadelphia.*

1. Caladiums appear to best advantage without any edging whatever.
2. *Pondeteria cordata, Sagittaria variabilis, Sarracenia purpurea, Lobelia cardinalis, Arundo Donax, Eulalia Japonica*, etc., are suitable for rock-work around a fountain.
3. Tender Water-lilies should be taken up before winter, planted in a sufficiently large tub, and placed in a cellar free from frost. Or they may be left in the tub the year round by simply placing them under water in summer, and in the cellar in winter.
4. Several of our native Ferns are very handsome, and, if not convenient to bring them from the woods, may be obtained from most nursery establishments.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

Mr. Peter Henderson has gone to Europe for a well-earned vacation.

T. E. McAllister has moved from 31 Fulton Street, New York, to 22 Dey Street.

Hance & Borden have moved their New York office to 22 Dey Street, along with Mr. T. E. McAllister.

T. W. Wood of Richmond, Va., has a rapidly growing seed trade in the rich James River Valley and other parts of the South.

Phineas B. Hovey, for some time probably the oldest living seedsman in the United States, died at Cambridgeport, Mass., recently, aged 82.

C. A. Reeser of Springfield, O., has had a good season. He says that advertising in one season fully doubled his sales. He believes in THE AMERICAN GARDEN.

The genial Albert McCullough, of J. M. McCullough's Sons, Cincinnati, O., reports an increasing trade. Their Onion-set department is specially flourishing: in this they have few if any equals.

Albert Williams of Sharon, Pa., advertised in THE AMERICAN GARDEN and experienced a prosperous season. He had proposed to advertise more extensively but his small advertisement sold his stocks out close.

O. K. Gerrich of Portland, Me., has established a nursery at Geneva, N. Y., where it is said he has excellent stocks. His trade is increasing in spite of the depression in business: a good sign of his standing as a nurseryman.

Hiram Sibley & Co., Rochester, N. Y., say they have considerably increased their catalogue trade over last year. Mr. Sibley, in his eightieth year, is still quite well and strong, though suffering from rheumatism, which interferes with walking.

Our old friend Joseph Harris of Rochester, N. Y., has changed his business by forming the Joseph Harris Seed Co., and it is hoped has united with himself a business manager who will relieve him from the too hard work he has been doing the past few years.

A. C. Nellis & Co., Canajoharie, N. Y., had trouble with their mail. Setting a detective to work on the case, he discovered that a post office clerk had been systematically robbing their mail for some months previous. This explains the complaints they had received from customers who had sent them money, but got no response thereto.

Messrs. Brockner & Evans, 422 West Street, New York, gave last month a private exhibition to their friends and patrons. The commodious warehouse was tastefully fitted up for the occasion, and everything displayed to excellent advantage. The center of attraction was their new artificial hatcher, which appeared to do its work to perfection. In addition to this were innumerable improved contrivances and conveniences for the poultry yard; also full-sized dog houses and kennels, with improved and very convenient appliances for keeping and rearing dogs; also a great many patterns of fencing and ornamental works for the lawn, garden and farm.

This method of bringing goods to the notice of buyers through private exhibitions, is an excellent one, and will no doubt be more generally adopted by manufacturers and merchants.

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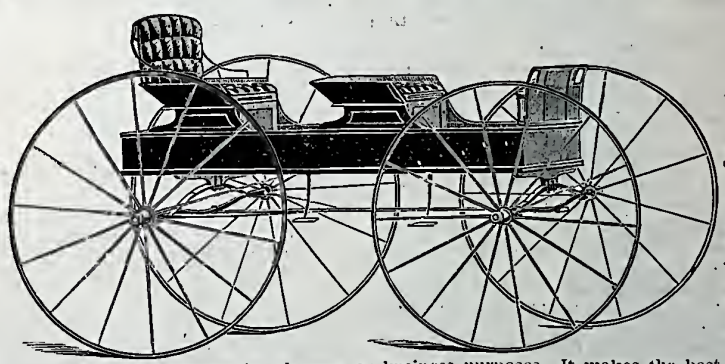

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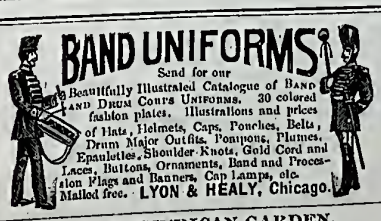

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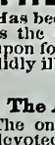

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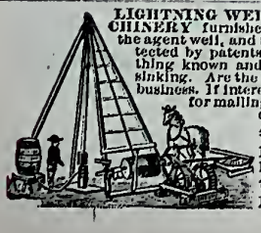

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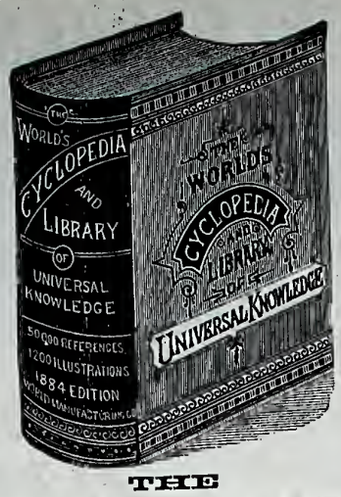

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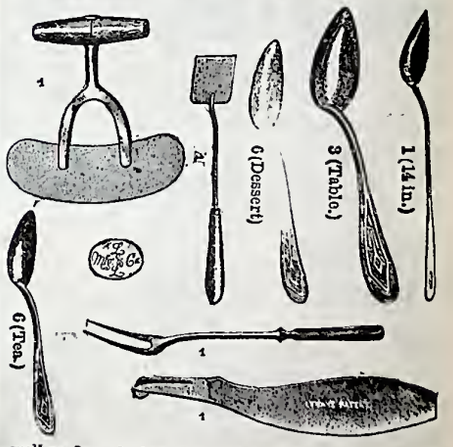

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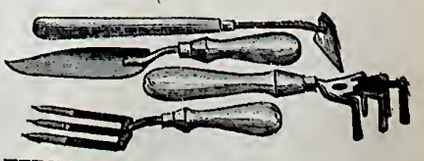

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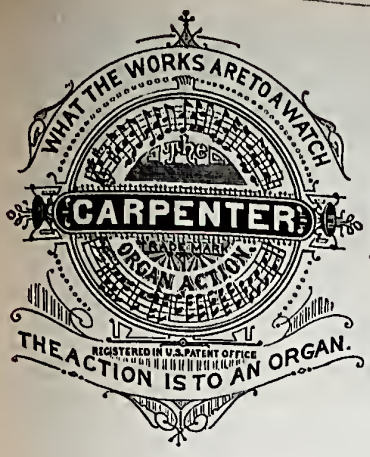

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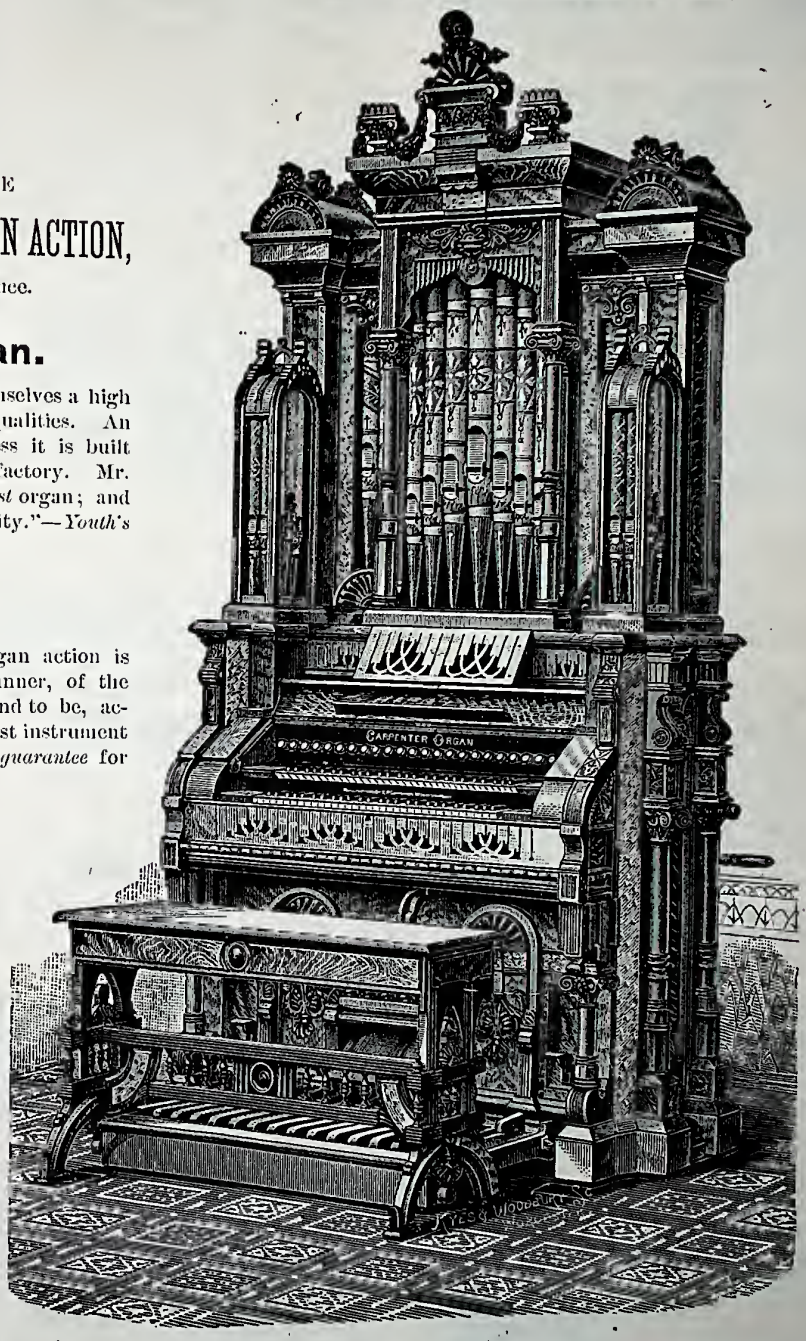

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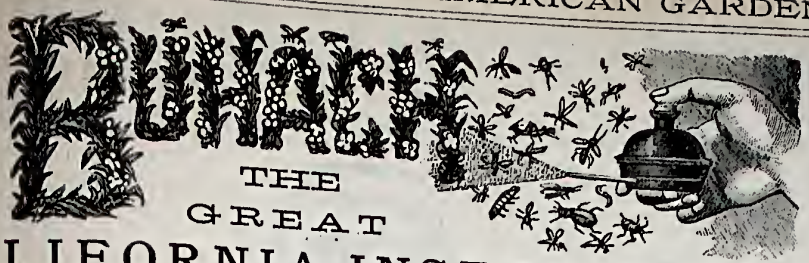

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BUHACH POWDER will kill Rose-bugs. Last year it was blown upon them through bellows. This year we propose to use a Buhach extract, made by dissolving four ounces of the powder in a gill of alcohol and then adding one gallon of water, applied with force pump and "cyclone nozzle." We do know that Buhach will kill cabbage worms and the dreaded rose-bug.—*Rural New-Yorker*, April 25, 1885.

CABBAGE WORMS AND POTATO BEETLES. Prof. A. J. Cook says: I found Buhach efficient in destroying the Colorado potato beetles, the caterpillars of the cabbage butterfly and plant lice.

SLUGS, CATERPILLARS, GRUBS, ETC., ETC. I find it very fatal to slugs, caterpillars, grubs, flies, mosquitos, and both parasitic and plant lice.—*A. J. Cook, Entomological Laboratory, Agricultural College, Lansing, Mich.*

BUHACH, Safe and Sure Insecticide. I have been surprised by the effect produced on the hairy Tent-caterpillar by water containing the extract of 1 lb. of powder to 50 gals. They paid little attention to the bellows and powder, at least when the wind blew; but a sprinkle of the diluted extract promptly caused them to squirm, drop off, and finally die while attempting to crawl away.—*E. W. Hilgard, University of California.*

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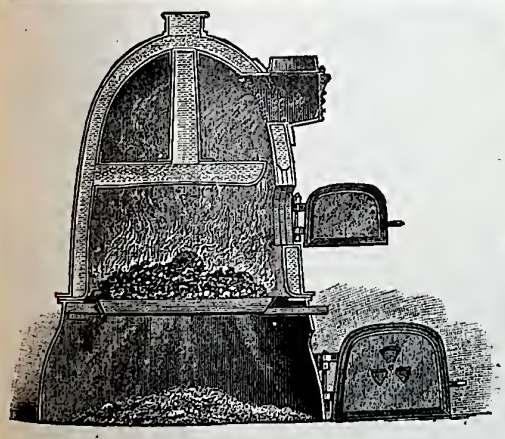

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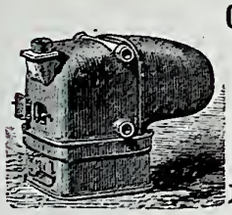

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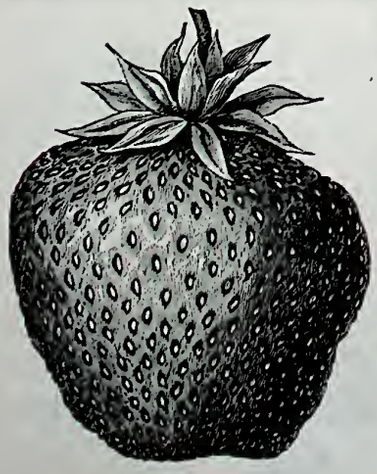

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12 ONCIDIUMS,	12	"	"	"	9.00
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We have lately added to our collection **4,000 Established Orchids**, and from **3,000 to 5,000 Not Established.** If you want to buy good Plants as cheap as good Roses write to us, stating what you want, and what size of plant, and we promise to answer you by return mail. We grow to sell and only ask a trial.

Plants from Guatemala.

Our latest acquisition is the great exhibit of the Court of Guatemala at the New Orleans exposition, comprising over **7,000** large plants, among which are fine masses of *Lycaste, Skinneri, Odontoglossum grande, O. pulchellum, majus, etc.*

It is safe to say that our collection is unequalled by commercial florists in America.

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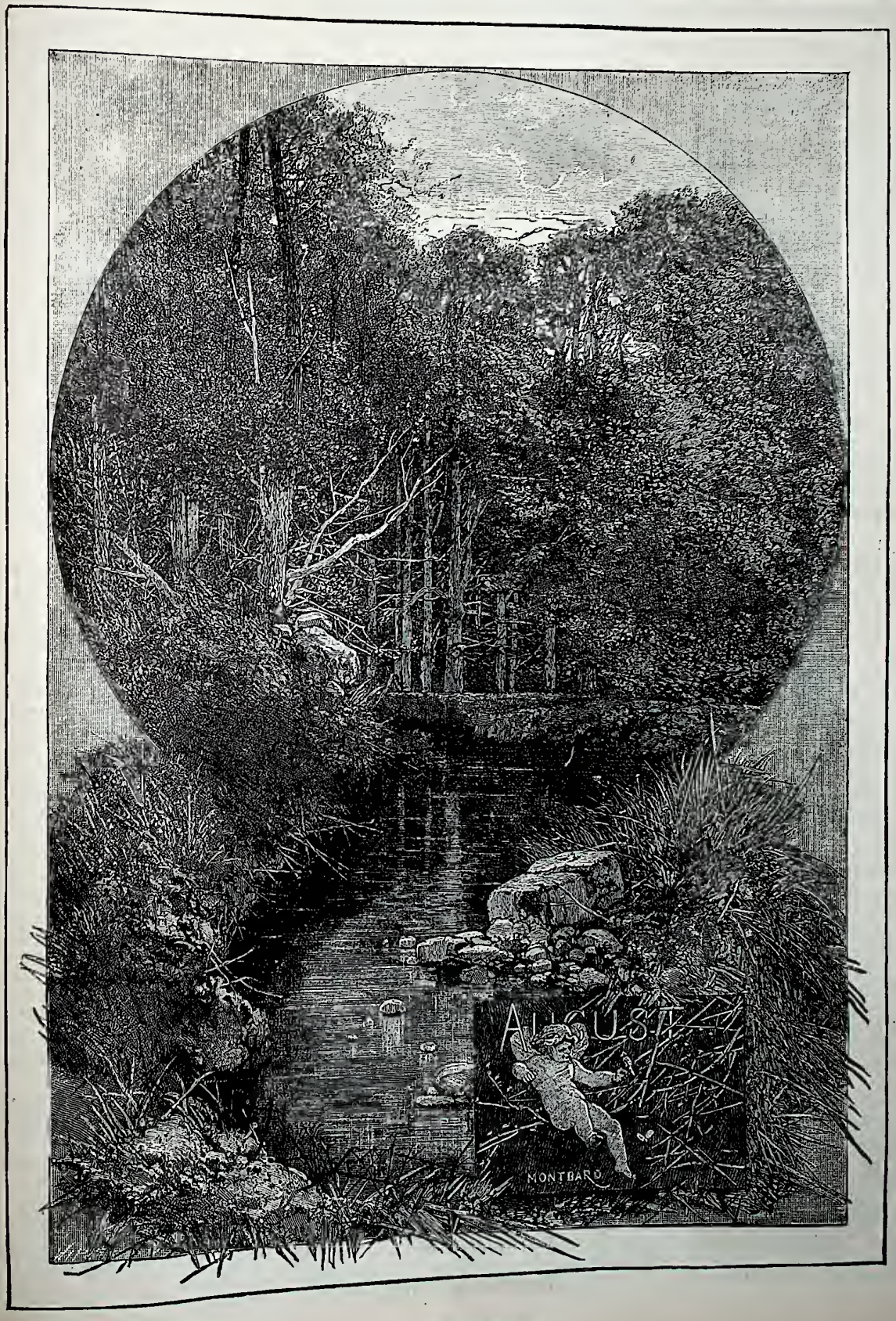
Dr. F. M. Hexamer, Editor.

Vol. VI.
Old Series, Vol. XIII.

AUGUST, 1885.

No. 8.



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The Vegetable Garden.

SEASONABLE HINTS.

At this season of the year, the skill and good management of a gardener will show themselves in the condition of his grounds plainer than at any other time. While in a well-managed garden every foot of ground is occupied with useful or ornamental plants, and second and third crops follow the previous ones in quick succession, in far too many instances, decaying stalks and vines and rank weeds are the only occupants of the land made vacant by the removal of early vegetables.

Clean Culture.—To those who have never tried it, it would seem wonderful how much a small piece of ground can be made to produce with clean culture, and how much easier it is to destroy weeds in their nascent state than after they have taken possession of the entire ground. But the object of cultivation is not only the killing of weeds; the loosening of the soil is of not less importance. Loose soil forms the best possible mulch and safeguard against drought. The careful cultivator finds rarely any weeds to kill, but stirs the ground frequently because he knows that by so doing he benefits his crops.

Thinning Roots of all kinds, Carrots, Parsnips, Beets, Turnips, etc., is, next to rich soil, the most essential condition to success in their culture. To crowd half-a-dozen roots into a space that affords room and nourishment for one only, is about as reasonable as to turn six times as many cattle into a pasture as there is forage for.

Raising Seeds.—When one has an unusually good strain of certain kinds of vegetables which it is desirable to retain, the wise thing to do is to save some seed for future use. But to gather the leavings of Peas, Beans, Corn, etc., for seed, is not perpetuating a valuable strain, it is, on the contrary, a sure way to deteriorate it from year to year. Only the best and earliest seeds should be saved for sowing.

This is not an easy matter in an ordinary garden, unless separate plats are set aside for seed-raising exclusively. It is for this reason that seedsmen's seeds, which are the entire products of the crops, are, as a rule, better than those saved from the private gardens.

Peas and Beans of early varieties may still be planted; it should be remembered, however, that all seeds sown in midsummer have to be covered deeper than in spring. Deep planting defies drought, produces larger yield and promotes continuance of bearing; six inches is not too deep for Peas, provided there is sufficient depth of soil. It would be folly to plant seeds into a sterile sub-soil.

Winter Radishes make an excellent relish for winter use. The seed may be sown at any time this month. The treatment is the same as that for early Radishes, but to insure crisp and tender roots, deep, rich, mellow soil is still more essential. The Rose-colored China is the variety most frequently seen in our markets, but for home use we prefer the California Mammoth White. Packed in sand they keep all winter.

SOME NEW AND OLD LETTUCES.

The different sorts of Lettuce show a wide range of variation, and one finds difficulty in believing that all can belong to the same species. The Deer Tongue has distinctly lanceolate leaves, two or three times as long as broad, with a long, pointed apex, and nearly entire unwaved borders. The Green Fringed has leaves decidedly broader than long, with a finely dentate and intricately ruffled border. Between these two extremes, we have varieties exhibiting almost every possible shade of variation. These multifarious varieties almost always come true from seed, even when the sorts from which the seeds were taken were grown in close proximity. In other words, the varieties do not seem to self mix to any great extent. I have seen no evidence of cross-fertilization in upwards of 50 varieties, grown from seed of my own saving, except when I intentionally crossed two sorts.

Although there are many varieties of Lettuce that are truly distinct, the names printed in the catalogues are usually far more numerous than the varieties which they represent. Of the sorts grown in our Station garden, about 150, I have collected more than 700 different names. I will describe a few of the more interesting varieties.

THE DEACON.—All in all, this is the finest heading variety we have grown. Introduced by Joseph Harris. This is one of the dark-green, thick-leaved sorts, nearly all of which are of good quality. Head compact, roundish or a little flattened when of full size, and in some plants measuring fully five inches in diameter. Outer leaves few in number, which with the perfectly defined head give the plant a very distinct appearance. Mr. Harris writes me that he procured the seed of a Mrs. Miller, residing near Rochester, a woman who came to be widely known as a grower of fine Lettuce. I have been surprised that this truly superior variety has not appeared under any other name.

WHITE CHAVIGNE.—An excellent heading sort, probably of French origin. Thick-leaved, deep green; frequently forms compact heads five inches in diameter: quite different from The Deacon, as it is low and spreading in habit.

LARGE WHITE STONE SUMMER.—Another superior heading Lettuce, to which there are, including foreign appellations, more than a dozen different names. Among these are Hardy Honey, Large Green, Large White Cabbage, Late White Cabbage, Princess, Royal Cabbage, Saxony, Sugar, very Large Yellow Paresseuse and White Cabbage. Foreign names, French: Laitue blonde d'été de Saint Omer, Laitue grosse blonde paresseuse. German: Gelber Faulenzer Lattich, Grosser gelber Dauer Kopf-Lattich, etc. I have not verified all of these synonyms. Several I give on the authority of M. Vilmorin of Paris and Mr. Robert Thompson of England. This is a thin-leaved, yellowish-green variety of very large size, which sometimes forms a head six inches in diameter. Both this and the White Chavigné may head as well as The Deacon, but owing to their more numerous outer leaves, they are less attractive in appearance.

THE BERLIN, of which there seem to be at least 14 different names, is also an excellent heading sort, though its heads are not as large as those of the three described above. The following names have been given to this variety:

All The Year Round (black seed), Berlin White Summer, Black-Seeded Satisfaction, Black-Seeded Yellow, Fine Imperial Cabbage, Leyden White Summer, Salamander, and Satisfaction Black-Seeded. Foreign names, French: Laitue blonde à graine noire, Laitue blonde de Berlin, Laitue blonde de Tours, Laitue royale à graine noire. German: Berliner gelber. Kopf-Lattich, Grosser gelber Berliner Lattich.

THE GOLDEN SPOTTED is desirable for later use, as it is very beautiful in appearance, of excellent quality, and very slow in running to seed. It is not of large size, but heads well. Its leaves, which are very thin, present a beautiful mingling of golden green and brownish red.

PELLETIER.—This is a very peculiar Lettuce and is almost attractive enough for the flower-garden. The borders of the leaves are deeply cut into long, pointed lobes, of which the edges folded together below cause the apexes to point upward, giving the plant a very singular appearance. It forms a compact, pointed head of medium size.

RED BESSON.—Synonyms: Marvel, Merveille des quatre saisons. This is a deep, glossy, red variety; the only red variety of my acquaintance in which the color is sufficiently bright to make it attractive. It is a Cabbage Lettuce having densely blistered leaves and it forms a compact head of large size, that remains a long time even in hot weather. The red Lettuces are not generally esteemed for the table, at least not in this country, but I think this one of the best of them.

DEACON HINE.—This variety sent out by Messrs. Ferry & Co., is entirely distinct from The Deacon of Mr. Harris. It is a very low, spreading, compact growing Lettuce, of which the thick, dark-green leaves overlap one another like the shingles on a roof. I judge it is of excellent quality though it does not form a clearly defined head.

I have found nothing better for culture in frames than the well-known White-Seeded Tennis Ball. Landreth's Forcing, which closely resembles Dippe's Emperor, sent out by Damman & Co. of Italy in 1883, is also an excellent forcing variety.

Almost every season some of the old varieties are offered to the public under new names. The present year I note that the Rochester and Hubbard's Market Lettuces and the new Premium Cabbage seem to be nothing more nor less than the old White Summer Lettuce, or All the Year Round white seed. The New Perpetual is to all appearances the well-known Early Simpson; the New Silver Ball is undoubtedly the White Paron of Vilmorin, and the New Stubborn-Headed is apparently the old Berlin Lettuce. The New Orleans Cabbage sent out in 1881, seems to be the old Turkish or Butter Lettuce. These are all excellent varieties, but they are not new, as one would suppose from the catalogues. "ELM."

New York Agricultural Experiment Station.

A handful of bran sprinkled over heads of Cabbage when the dew is on, is recommended us as an infallible remedy for Cabbage worms.

VARIETIES OF SWEET CORN.

From the description given in catalogues it will often be found difficult to form an accurate idea about the relative sizes of the different varieties of Sweet Corn. The accompanying illustration, from the catalogue of Messrs. Peter Henderson & Co., will be found a material help in this regard.

CELERY GROWING.

We cannot boast of as good natural advantages for the growing of this crop as those enjoyed by the Michigan growers, especially those about Kalamazoo, yet nevertheless no small amount of Celery is grown round about this city (Quincy, Illinois). The growers are now preparing to transplant the seedlings. As the raising of the seedlings is quite troublesome, some of our most extensive growers buy all their plants. As they can buy of near neighbors, they get the plants at a reasonable price, and one which probably justifies them in buying plants instead of raising them from the seed.

Manure is used liberally—although the land is naturally very fertile—and well incorporated in the soil, which is thoroughly fined. The ground is left level, and the plants are put out on the surface, as Cabbages, etc., are planted. For Celery for fall use the plants are put six inches apart in rows four feet apart; for winter Celery the rows are made only two or three feet apart. In transplanting, it is important to get the plant set to just the depth of the roots; also, to firm the ground about them—but this latter applies to all plants. This work is done from July 1st to August 15th. The evening is the best time for transplanting, and if there has just been a copious shower it is all the better for the plant but not so pleasant for the planter. If there has not been a shower the plants are given a copious watering, and but a very small proportion fail to continue growth.

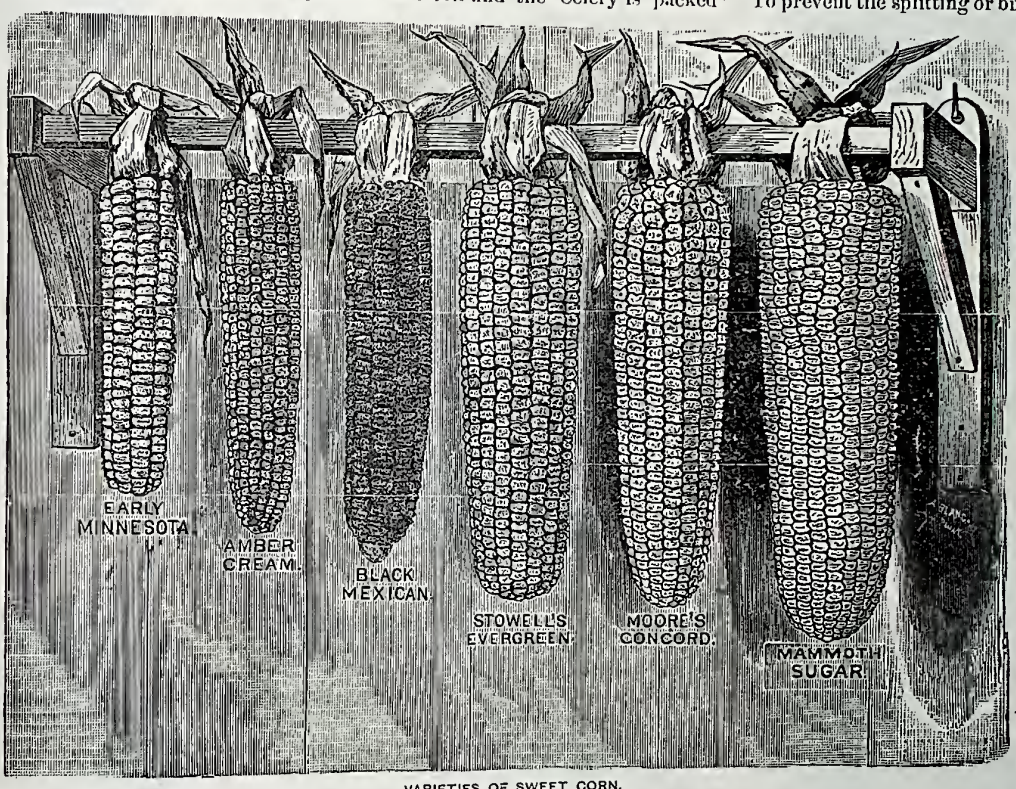
The cultivation is easy—to keep the ground clear of weeds is all that is required. Horse hoes are used, any weeds growing where the hoes will not reach them being removed by the hand hoe or by pulling. Cultivation is thus kept up till about the first of September, when "handling" begins. The earth is drawn to the row from each side—a hoe is commonly used for this work—and pressed firmly against the plants to give their leaves an upward growth and thus fit them for banking. But as it is rarely safe to leave winter Celery in the ground here, none but that designed for fall use should be banked.

Banking is done about two weeks after handling is completed—say October first. The soil between the rows is dug up and banked up solidly against the rows of Celery, being compacted in its place by the back of the spade. In four weeks it is blanched ready for use. If left in the ground till late the bank is made stronger, and a foot-thick layer of litter is also packed against it.

For winter-keeping our growers utilize all their spare cellar space. The Celery is taken from the ground from the last of October to the last of November—to give a succession—and placed in narrow boxes not quite so deep as the Celery is high. Sand or rich soil to the depth of two or three inches is placed in the box and the Celery is packed upright on this sand or soil, the roots being set on it but none of it allowed between the stalks. The cellar is kept cool if the weather is warm, as it very frequently is when the Celery is first boxed. It is ready for use early in the succeeding year—say from January first to April first. Some set the Celery down on the earthen floor of the cellar, placing it in narrow compartments made by putting on edge, a few inches apart, boards about as wide as the Celery is high. Some growers have "Celery houses"—low houses banked up around the sides with earth and a floor of earth—the bottom of an excavation two feet deep—divided into narrow compartments by boards on edge; but so far these houses have blanched the Celery only fairly well.

Those who have not the Celery houses trench when their cellars are filled. High ground, perfectly drained, is selected. Trenches the width of a narrow shovel or spade blade are dug as deep as the Celery is high. In the trenches the Celery is packed compactly, standing upright, as in the boxes or compartments in the cellar. As the temperature lowers, litter is placed over the Celery, the litter being increased as the weather grows severer. A covering of litter eight to ten inches thick will protect the Celery from any ordinary weather. Some place a very light covering of earth over the litter. As thus grown and blanched our gardeners find Celery one of their most profitable crops. Golden Dwarf and Sandringham are the two varieties mostly grown here.

JOHN M. STAHL.



VARIETIES OF SWEET CORN.

FRESH SPROUTS.

The average yield for three years of whole Potatoes planted at the Ohio Experiment Station was 246 bushels per acre, that from single eye pieces 130 bushels per acre.

To prevent the splitting or bursting of Cabbages, J. J. H Gregory recommends to go frequently over the ground and start every Cabbage that appears to be about to mature, by pushing them over sideways. Heads thus started are said to grow to double the size they had attained when about to burst.

Cabbage maggots are very numerous and destructive in many localities. Of the several remedies tried at the New York Experiment Station, the kerosene emulsion, prepared as follows, has been found most effective. One pound of common soap is boiled in four quarts of warm water; when all is dissolved and while the suds are boiling they are removed from the fire. One quart of kerosene oil is then added and thoroughly mixed by stirring vigorously until the mixture is cold. One pint of this emulsion is dissolved in ten gallons of hot water and applied to the roots of the plants.

Melons do not require frequent change of land. The veteran Marshall P. Wilder says that he has grown Melons on the same land for ten years; the ground has a south aspect. He prepares a compost of manure, soil and guano, which he spreads on the land in addition to manuring in the hills. Surface manuring he considers very important. He has no trouble with insects, as he gets up in the morning before they do.

The Fruit Garden.

SEASONABLE HINTS.

"Do you advise summer or spring planting of Strawberries?" is the essence of several letters before us. This is one of those questions which cannot be answered unqualifiedly, as each system has its advantages.

Presuming that there is already a thrifty, clean Strawberry bed on the place, from which a fair crop may reasonably be expected next year, it will make little difference in the final results whether plants are set out now, or in the fall, or next spring. But when there are no Strawberries at all on the place, or, the old plants have been killed by frost last winter, then we would decidedly advise to plant at the earliest moment practicable.

Potted Plants have many advantages over ordinary layers for summer planting. "Potted plants are a humbug," some all-knowing ones will say. Poor potted plants may be worthless, to be sure, and a fraud—that is, the nurseryman who palms them off for good ones—but they are no more a humbug than flour is a humbug because the last barrel bought from the grocer was musty or sour.

Plants that are pot-bound, or such as have not yet formed a good ball of roots, are certainly not to be recommended, but with good, well-rooted plants failure is hardly possible. If properly taken care of they will produce as large if not a larger crop of berries next season than is obtainable in any other way. The principal objection that can be made against them is that, when they have to be procured from a distance, the cost of transportation adds considerably to their cost.

Fruit Trees, as a rule, receive too little attention at this season. Sprouts that spring up around the trunks of trees may be done away with now more effectually than at any other season. The soil should be dug away around them, and the shoots cut clean away at the starting point; thus treated few will come again, while when cut off in spring in the usual manner, they will only start again more vigorously.

The Codling Moth, although not native to our country, is increasing at a frightful rate. The female moth deposits her eggs, about fifty, singly in the blossom end of the Apple, just as it is forming generally. The egg hatches in about a week, when the young worm at once works its way to the core of the fruit. After reaching maturity it leaves the fruit and seeks a hiding place where to spin its cocoon, generally under the loose bark and in the cracks of the tree. Some of the larvæ escape before the fruit drops, but a great many of the unripe Apples found on the ground still contain the larvæ, and in this we have the easiest and surest remedy for this pest. By picking up every few days all the fruit dropped, and feeding or burning it, great numbers of worms may be destroyed.

Mildew on Grapevines usually makes its appearance this month, especially on thin-leaved varieties. Dusting the affected vines with "flowers of sulphur" is the best remedy. It should be used at once as soon as the first signs appear, and not only on the affected parts, but over this entire vines. Sulphur bellows, made for the purpose, are the most convenient for applying this powder.

THREE STRAWBERRIES.

Three new Strawberries have so far been entered for THE AMERICAN GARDEN prize: The Jewell, by P. M. Angur of Middlefield, Conn.; the Parker Earl, by Jno. T. Lovett of Little Silver, N. J.; the No. 5, seedling, by J. G. Bubach of Princeton, Ill. Each of these varieties has made an excellent record so far, and we hope that one of them at least will surpass anything now in cultivation in any country.

But there should be a score of new sorts in competition for this prize, and we doubt not that more will come forward in due time. We seek to stimulate the production of more valuable varieties, to the end of benefiting the entire fruit-growing public.

There is plenty of room for improvement, so long as it is openly claimed in many quarters that there is now no better market berry than the Wilson, while others hold up the Sharpless as supreme. Yet few people claim even a preference for the Wilson for quality, and the Sharpless in many gardens is very inferior in ripening, is hollow and pulpy, and gets soft quickly. Yes, there is plenty of room for effort in the production of new varieties while Wilson, Crescent, Champion, Sharpless and other inferior kinds hold prominent place.

THE GOOSEBERRY.

Until recently our fruit-growers have given but little attention to Gooseberry Culture, finding that varieties that are grown to perfection in the moist, cool climate of England could not be successfully cultivated under the influence of our dry and hot seasons. Mildew and sun-scald affected seedlings of these sorts; in like manner, in consequence of which fruit-growers had given up the matter and reconciled themselves to the only three native varieties under general cultivation here.

The older of these, Houghton Seedling, is a direct descendant of our common native species and originated in Massachusetts; the other two are the Downing and Smith's Improved, which are seedlings of the Houghton and are excellent sorts; but there is no reason to doubt that we may yet see much improvement over the best of these, at least we should not be content without making steady and constant effort with that in point of view by experimenting.

The Industry, a variety recently introduced, although of foreign origin has thus far given very flattering results. Its ability to withstand the vicissitudes of our climate in various sections has, however, yet to be fully established.

Several other seedlings of large size are under trial in various parts of the country, so that among all these on-coming new sorts we may reasonably expect some improvement, and perhaps a real "bonanza" will be discovered.

In England the Lancashire weavers have for many years held a reputation for raising the largest and finest Gooseberries that the country affords. A pamphlet published each year at Manchester gives a list of the prize sorts and other information. A list of 700 prize varieties is given in Lindley's "Guide to the Orchard."

In favorable seasons with extra care some of the English sorts, such as Whitesmith and Crown Bob, may be grown in this country. They should be given a somewhat moist and partly shaded location, a light mulch applied, and if mildew appears, a frequent but light application of flowers of sulphur may check it somewhat.

For our native kinds the common Currant-worm is the worst enemy, but may be easily squelched by an application of pure hellebore, either dusted on or by mixing with water—about one oz. per pailful, and applying with a garden sprinkler. After the fruiting season is over, or in young plants not yet in fruit, a dry application of slug shot is cheaper, more easily applied and just as effectual. Bubach is equally effective.

W. H. RAND.

APPLES FOR NORTHERN NEW ENGLAND.

A farmer in northern Vermont, allured by the tree-peddler's picture book, planted a large orchard of Baldwins, R. I. Greenings, and Northern Spy's. Now he wishes that he had planted Wealthy's and other Apples of Russian origin, or descent, instead, and that the peddler had never crossed the State line. But he has one advantage over his Connecticut brother, mentioned on page 145 of the June GARDEN. His trees are all dead to the ground, and he has only to begin again without any incumbrance on his grounds, or any temptation to delay.

MORAL, in both cases:—An intending orchardist should seek instruction in the business elsewhere than from tree-peddlers; and should understand that as "what is one man's meat is another man's poison," so the selections for orchard planting in different sections of this vast country are necessarily as different as the sections. Here is a list for northern New England, which does not include a single variety now grown in southern New England and New York, yet every one of them is the equal, in its season and use, of the best fruits of like season and use in that section.

SUMMER: Yellow Transparent, Grand Sultan, Charlottenthaler, Tetofsky.

AUTUMN: Switzer, Peach of Montreal, St. Peter's Prolific Sweeting, Duchess of Oldenburgh, Golden White.

WINTER: Wealthy, Scott's Winter, Newport Winter Sweet, McIntosh Red, Giant Swan (of Minnesota).

In addition, we have on trial the following most promising Winter Russians from the importations of the Iowa Agricultural College:—Longfield, Antonovka, Anis, Titovka, Arabskoe and Bogdanoff. These Russian and "iron-clad" Apples have their place, and a big one, in these United States.

DR. T. H. HOSKINS.

QUALITY AND QUANTITY IN STRAWBERRY CULTURE.

High quality of fruit generally implies a weakened growth of foliage accompanied by a lack of vitality. Quantity causes a similar defect, through over-taxation of the foliage. Varieties noted for productiveness "run out," as is said, after a few years for want of foliage. Most of the new varieties of the day fail in this particular, so that among originators of new varieties it is a well recognized fact that foliage gives way to fruit in the Strawberry. Foliage becomes the important thing to preserve in successful culture. Not too dense a mass, nor of too feeble a growth. In the one case the berry

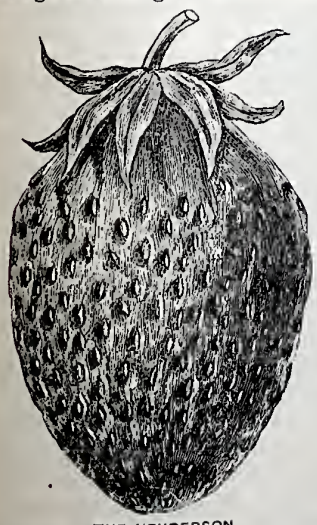
will not set well; in the other sun-scald and defective ripening will result.

To preserve the foliage in the so-called new and improved varieties as much as possible, the soil should be of firm texture, the culture should be not over half an inch deep; in garden cultivation the hoe and rake only should be used. In loose soil the roots extend until they reach more compact strata, and the foliage will not increase in vigor as long as the roots are growing in length. Where a vigorous growth of foliage is made

THE MAY KING.

in light or loose soils, unless the variety planted is one of exceptional vigor in foliage, the ground has to be made unduly rich, forcing an unhealthy state of foliage and inducing liability to disease in the plant.

Whether single stool or matted bed culture should be adopted, naturally depends on the state of the foliage. Many varieties, Jersey Queen, for illustration, in firm soils will make such heavy foliage in single stools as to prevent the proper setting of the berries. Here the plants are allowed to run to matted beds, thus diminishing the excess of foliage. Take the same variety in a loose or lighter soil, even in single stools, and the foliage will change so as to give the best results;



THE HENDERSON.

in this case no runners should be allowed. Some varieties are noted for a scarcity of foliage in some localities. The Sharpless with me, no matter what culture it receives, produces not over five leaves and has therefore to be grown under the matted bed system to protect the fruit from sun-scald.

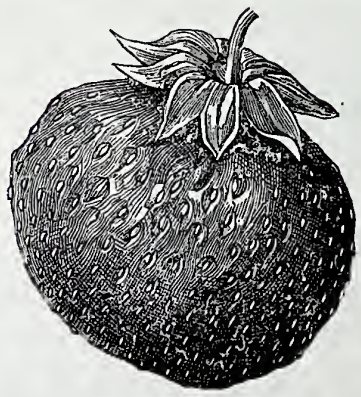
Take the much abused and berated Great American Strawberry and you have a variety illustrating the effect of foliage on fruit. This much-talked-and-written-of-variety under proper conditions has the best of foliage, and produces wonderfully. Yet the novice in Strawberry culture can never grow it successfully. The least deviation from the correct method of culture is sure to result in failure. Except with late, fall-set plants, I have never seen success in other than matted beds.

I know of no berry that combines quality, productiveness and general healthy growth in so great a degree and proves satisfactory under almost any kind of culture, as the Prince of Berries. It is among the better varieties what the Wilson is among the poorer. The primary class of cultivators will probably continue for some time to cling to the Crescent, Wilson, Champion and other varieties low in the scale of quality, but, unless all signs fail, the Strawberry of the future must combine quality with quantity to make it acceptable to a discriminating public. J. B. ROGERS.

SOME OF THE NEW STRAWBERRIES.

May King.—Has ripened this year in advance of Crescent and Crystal City, so that it may safely be accepted as the earliest large variety in cultivation. It is bright scarlet, large and of good quality. Flowers perfect, plants healthy and vigorous.

Henderson.—This is one of the very best



THE PRINCE OF BERRIES.

flavored varieties we are acquainted with, combining rich flavor with pleasant sprightliness. The fruit is large, elongated conical, with neck, and of dark color; plants large and productive.

Prince of Berries.—This is by many considered Mr. Durand's best seedling, and it is in reality a superb berry, large, roundish, of light scarlet color, and of highest quality. On Mr. Durand's grounds it is actually wonderful, but it succeeds also over a wide range of country. The plant is a good, strong grower, and very productive; flowers perfect.

Parry.—A seedling of Jersey Queen, raised by Wm. Parry. Berries very large, obtuse conical, bright, glossy crimson, and of good quality. It is immensely productive; foliage remarkably vigorous and healthy; flowers perfect.

Cornelia.—A late, firm berry originated by Matthew Crawford. It is of good, medium size, conical, light crimson, and of good quality. Plant large, stocky and healthy. Its extreme lateness and firmness make it a valuable variety for northern markets.

There is "a good deal of Strawberry" about this issue of THE AMERICAN GARDEN, and we shall have some striking good things to present on the same fruit next month.

SHORT CUTTINGS.

The Sharpless Strawberry in adjoining gardens in Greenfield behaves quite differently. The soil in both is clay, but one has had more sand applied and that gives much the finer berries.

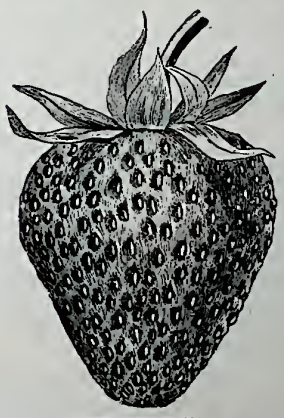
The canker worm is destroying entire orchards in several localities. Spraying the trees with a mixture of one ounce of Paris green and ten gallons of water is a sure remedy for the pest.

THE PARRY.

Although it is not possible to give definite rules about the distances to which fruits should be thinned, about four inches apart for small and medium-sized fruits, and five to six inches for large ones, will be found a good standard for the different sizes.

Chicago and the other large western cities have been unable to consume the immense crop of Strawberries raised in the Mississippi Valley this year; in consequence thereof Bostonians were treated to the novel sensation of having Illinois Strawberries offered in their markets.

Of the older varieties of Strawberries, J. H. Hale finds Manchester at the head yet,



THE CORNELIA.

closely followed by Windsor, Miner and Crescent, in the order named. Mrs. Garfield is superb this season, and Daniel Boon is giving a big crop of fine-looking fruit, but it is of rather inferior quality.

The Strawberry box presented substantially the same appearance this year that it did last season, observes the Market Journal, except that the bottom was a little nearer the top and the top a little nearer the bottom. The top and the bottom become closer friends every year.

The Flower Garden.

TO A DANDELION.

Little mimic of the sun,
  Hiding in the fragrant grass,
Have you any kisses won
  From the pretty maids who pass?
When the sun slips down the west
Some fair girl shall come in quest
  Of the secret which you lock
In your tiny golden breast;
  You shall hear an airy knock,
  And a question: What o'clock?

At the very verge of night,
  When the summer twilight's breath
Makes you dizzy with delight,
  Dance in happiness to death:
When the peaceful moon shall peep
Down from star-lit skies that weep
  Tears of sweet, delicious dew,
Tender, gracious eyes shall keep
  Quiet company with you
  'Neath the heaven's cover blue.

Ah, you dainty, snowy ghost,
  See what bliss your wisdom brings!
Tell me, pray, what angels boast
  Such a zephyr for their wings?
Just because the hour you tell,
She repays your magic well,—
  Wafts you off to paradise;
Sounds for you a gentle knell;
  Lights your journey with her eyes:
  Would that I were half so wise!

—*Frank D. Sherman, in Outing.*

SEASONABLE HINTS.

Pansies.—The great favor in which the Pansy is held by all true lovers of flowers is natural enough, for there is no other flower that can compare with it, in its sweet, fascinating loveliness, and none that may be had the year round with so little trouble. If confined to the growing of but one kind of flowers, we think we should choose the Pansy.

To have a brilliant show of flowers all next spring and early summer, seed should be sown from the middle to the end of this month. When a cold frame is available, this is the best place for the purpose, otherwise, any sheltered, dry spot, made rich with decomposed manure, will do. A bed of a yard square is amply large enough to furnish all the plants required for a private garden.

After spading and leveling the ground, the seed should be scattered broadcast, covered lightly with firm soil—or sand, if the natural soil is heavy, and pressed firmly with a board. No more care is necessary during the remaining season than is given to seedling annuals and perennials. During winter a light covering of leaves and brush should be given.

Early in spring, so soon as the permanent bed can be made ready, which should be done by making the soil deep, rich and mellow, the seedlings have to be transplanted to it, about eight to ten inches apart.

For fall-blooming, sow in early spring, and transplant to a partly shaded position. But it is useless to expect good flowers from poor seed; better pay a liberal price for the best than accept poor seed as a gift.

Decaying Flower Stems of all kinds of plants should be cut down, and the beds kept as neat as possible. It is a poor plan to allow any plants to bear seed which is not wanted for use, as seed-bearing is far more exhausting than the production of flowers.

CHRYSANTHEMUMS IN POTS.

The plants should be in their blooming-pots by the first of August, if wanted for exhibition. If they have been well grown from the start they may now be shifted into 12-inch pots, though it is seldom necessary to use larger than 10-inch, and very handsome specimens may even be grown in several sizes smaller. When the pots are full of roots, give liquid manure twice a week, and when the buds begin to appear, if large flowers are wanted, thin them to a single bloom on each shoot.

I never had satisfactory success with Chrysanthemums grown outside and lifted for potting after the buds had formed, but never failed to get fine flowers by growing in pots all summer. Few people know the full beauty of well-grown Chrysanthemums, and it is to be hoped that the present fashion for them will lead to good results. C. A.

THE BEST WHITE ROSE.

To an inquiry of one of our readers for the best White Rose, Mr. A. Schultheis, the well-known Rose grower, replies: Merveille de Lyon, introduced a few years ago, is the best white out-door Rose I am acquainted with. It may be termed an improved Mabel Morrison, but of purer white, more double, and with firmer petals than the latter. The buds are beautiful in form, resembling Baroness de Rothschild, but fuller. The flowers retain their beauty a long time, and, when fading, the inner petals become tinted with salmon, or rose color. After being cut the buds may be kept in good condition for several days, even in warm weather. The growth of the plant is similar to Baroness, only more robust, the stems are less thorny, and the blossoms appear singly on the branches. Taking all points together, I do not know of a more desirable variety, especially for cutting.

Next best I consider Elise Boelle. This is a lovely Rose, white, delicately tinged with pink, of medium size, double, and of circular form. The wood is light green, and beset with numerous small spines.

PORTULACAS.

The Portulaca, by its creeping habit, covers, when well-grown, a foot or two of space so thickly as to hide the ground under its fleshy leaves. Its flowers are of many colors: rose, crimson, purple, white and yellow, and many are striped and splashed in brilliant combinations. A bed of it is a most gorgeous sight on a hot summer day. It is a great lover of heat, and flourishes luxuriantly when all else suffers from drouth. It likes a light, warm, sandy soil, with full exposure to the sun, and low beds on the lawn. It is unequalled among annuals. It is a profuse bloomer, and usually covered with flowers the entire summer.

Most varieties are single, but of late years double ones have been produced, resembling little Roses, and preferred by many for the beauty of the individual flowers, though the single ones are quite as showy and useful for masses of color. The seed sold as that of the "double" Portulaca has produced with me about ten per cent of double flowers, so that one cannot depend on getting double flowers, even when the seed has been gathered from such. E. E. Rexford.

THE CLEMATIS.

For as long as I can remember, the *Clematis Flammula* has been a widely-known favorite among us, and it is likely to remain so. Its hardiness and rapid growth, its numerous pretty white flowers and grateful fragrance, have won for it a love among the masses which is not likely to be soon superseded even by the larger and gayer flowers of more recent introduction. Even our native Virgin's Bower (what a pretty name that is) often finds a place trained over the simple "stoop" of the old farm-house and on more pretentious verandas. After a while we had cœrulea, Sophia, Helene, and others; but perhaps the Clematis that has done most to make the later forms grown is *Jackmani*. It is to-day, according to my observation, the most widely grown of all, with the possible exception of *C. Flammula*.

The Clematis ranks among the most useful and charming of climbing plants. It is easily grown, and is at home in a variety of soils, but thrives best in a loam of some body; it is a rapid grower, and quickly covers a large space; it embraces a pleasing variety of color; it is equally well adapted to covering a veranda, trellis, or out-buildings, and may be used in large beds or for covering rocks; and, not least, it is hardy, the latest introductions having passed through the last trying winter unharmed in this latitude.

There is this to be said, however, in regard to its hardiness: while a very rich soil produces the largest flowers and the most luxuriant growth, it has a tendency to make the plant more or less tender. Where the winter is generally severe, therefore, the plant should be grown in a soil only moderately enriched. It may be stated in this connection that the Clematis will also grow and bloom very well in a light, sandy soil, with flowers, however, diminished in size. Its accommodating nature in this respect adapts it to a wide extent of country, and it may therefore, in a sense, be claimed as a plant for the multitude.

It has generally been thought that the beautiful varieties that have been introduced during the past ten years or so are tender, and this has deterred many from planting them. I have tested the majority of the new kinds, and have found them to be quite hardy, and I therefore unhesitatingly advise the readers of The American Garden to plant them. I believe there are very few, if any, that will not endure our coldest winters.

In regard to the time to plant, it may be done either in the spring or in the fall. I prefer, however, to plant early in the spring, though I have planted in the fall with about as much success as in the spring. Much depends upon the condition of the plants. Last fall upwards of 50 varieties were planted on the second of December, and only one failed to appear this spring, the rest not only making a fine growth, but some of them a fair show of flowers. So much for the hardiness of the newer varieties of Clematis.

Plants may be bought grown in pots or grown in the open air. The former are to be preferred, if not too large. In the spring plant early, before much growth has been made. In the fall, plant late, or as soon as the wood has ripened. Pot-grown

plants are best, at least for inexperienced planters, and the plants, of whatever kind, are worth all the care you can give them in planting.

The Clematis can be grown in several ways, and in each produce most charming effects. It may be grown on a veranda, or on a trellis, or over an arbor, or trained to a pillar, or a stake, or on a wall, or in a bed; and if in a bed, it should be a circular one not less than ten feet in diameter. If some brush be thrown over the bed, the effect will be very picturesque. This was a favorite method with the late Mr. Downing; and I remember how much I admired some Clematis he had planted among a clump of very old shrubs, the nakedness of which they covered in a most graceful manner.

In training on a trellis, a shoot here and there will occasionally need a little help to get the trellis evenly covered. Small woven wire, with large meshes, is much the best frame for the Clematis to run on, especially when something in the nature of a screen is desired. If longitudinal wires are used, No. 14 wire is large enough; but in this case small copper wire should be used vertically or diagonally to lead the shoots where wanted.

The Clematis is divided into types or classes, which flower at different seasons, and by making a judicious selection from these, you can have a continuous succession of bloom from spring till autumn. The types alluded to are chiefly the *Montana*, *Patens*, *Florida*, *Lanuginosa*, *Jackmani*, and *Viticella*, and they bloom somewhat in the order in which they are named.

The recently introduced *C. coccinea* and *C. crispa* are native species, and bloom early. Some amateurs have been made unhappy on seeing *C. coccinea* die to the ground in the fall; but that is all right. It is the nature of the plant, as it is of some others.

Looking at the accompanying illustration for a moment, the dark-colored flower on the left with a white stripe is the Jackmani type, and close at hand is the Patens type. The large white flower in the center lower down is the Lanuginosa type, the flowers of which sometimes measure five and six inches in diameter. Above these are single flowers of the Patens and Florida types. In the lower left-hand corner, the small, bell-shaped flower is *C. coccinea*. The picture, as a whole, is an excellent portraiture of the various types of the Clematis on a small scale. This article would be very imperfect without a list of kinds to plant. The list is necessarily very brief, and only embraces a few of the more desirable kinds in each class. There are a good many more equally good, and some perhaps better; but they are mostly high-priced, and not easy to get. To put the list in the most useful form, I have arranged the classes in the order in which they flower. I place the species first.

Clematis montana, large pure white flowers in spring and summer. *C. coccinea*, a native species from Texas, bearing small, brilliant, scarlet flowers from June till frost. *C. crispa*, another native species, bearing very fragrant lilac-purple flowers in June and July. *C. Flammula*, bearing numerous small, fragrant white flowers from July to September.

A BOUQUET OF CLEMATIS.

The following, chiefly hybrids, have been mostly raised from the large-flowering kinds sent from Japan by Siebold and Fortune. For convenience they are usually divided into classes, which, as just stated, I have placed in the order in which they flower.

Patens type, bloom in spring and summer on old wood: Miss Bateman, white, dark bar; Lord Londesborough, deep mauve, red band; Lady Londesborough, grayish white, pale bar; Mrs. S. C. Baker, French gray, claret bar; Fair Rosamond, blush white, pale red bar; Stella, deep mauve, reddish bar; Vesta, white, with creamy tinge over the center bar; Albert Victor, deep lavender, pale bar; Standishii, light mauve.

Florida type, bloom in summer on the old wood: Lucie Lemoine, double white; Sieboldii, creamy white; Fortunei, double white; John Gould Veitch, double lavender blue; Duchess of Edinburgh, double white.

Lanuginosa type, bloom in summer and autumn on summer shoots: Lanuginosa, pale lavender; lanuginosa candida, grayish white; lanuginosa nivea, pure white; Aureliani, light blue; Gem, lavender blue; Lady Caroline Neville, French white, mauve bars; Otto Froebel, French white; William Kennett, lavender; Lawsoniana, rosy purple, very large; Duchess of Teck is of a pure white, with a mauve bar.

Jackmani type, bloom during summer and autumn on summer shoots: Jackmani, deep violet purple; Jackmani superba, an improved Jackmani; Star of India, reddish plum, red bars; velutina purpurea, rich mulberry purple; Lady Stratford de Redcliffe, delicate mauve; rubella, rich claret purple; Prince of Wales, deep purple; rubra violacea, is a beautiful maroon purple.

Viticella type, bloom in summer and autumn on summer shoots: Thomas Moore, plush violet; Mrs. James Bateman, pale lavender; viticella rubra grandiflora, bright claret red; viticella ramosa, reddish purple; viticella modesta, large bright blue; Lady Bovill, grayish blue; Hendersoni, bluish purple, bell-shaped; Francofurtensis, is of a deep purple color.

The Clematis requires careful handling at all times, as the wood is very brittle. The shoots, therefore, should never be allowed to hang about loose. As to pruning, very little is needed, except to cut out dead wood in the spring. The kinds that flower on the summer shoots may have the old wood shortened in a little in the spring; but, aside from cutting out dead wood in the spring, the Clematis may be mostly left to itself. Coccinea will renew itself annually; all the old wood, therefore, should be cut down to the ground, as it will all be dead. With the exercise of a little judgment in placing the kinds along a trellis, it may be made beautiful with flowers its whole length during the entire season.

I have not gone into ecstasies over the Clematis, as I might well have done, and felt inclined to do. There is no room left for it now. I therefore leave to those who plant them the full enjoyment of these charming flowers.

P. B. MEAD.

The Window Garden

AND GREENHOUSE.

THE WINDOW GARDEN FOR AUGUST.

If your Cinerarias and Calceolarias are not yet sown, sow them, and keep them in a cool, shady place. Prick them off and pot them singly as soon as they are large enough to handle. Some chopped-fine tobacco-stems scattered among them will keep off green fly.

Repot Chinese Primroses before they become pot-bound. If you have none, sow now and you will get nice blooming plants for late winter or early spring.

Repot young Cyclamens as they need it. Old Cyclamens at rest in pots or planted out will now be starting to grow; lift or repot, using rich, mellow, light earth, and well-drained, clean pots.

Geraniums, Heliotropes, Mahernias, and some other plants required for next winter's flowers, should be lifted and potted before the warm season passes; but Bouvardias, Carnations, Libonias, and some others are in time enough for a month or more yet.

Sow biennial Stocks for blooming next spring, and Meteor Marigolds for winter flowers. Attend to staking, tying, pinching, watering and other routine matters as formerly advised.

To rank-growing plants that are pot-bound, give encouragement in the way of liquid manure.

Use the prunings of Geraniums, Fuchsias, Alternantheras, etc., as cuttings. Strike some Nasturtiums (*Lobbii*) and when rooted grow them along in pots for winter flowers.

The following notes and queries have been sent to me by readers of THE AMERICAN GARDEN, and the answers to them may appropriately serve as seasonable hints at present.

CRAPE MYRTLE AND POMEGRANATE.

"I have a Crape Myrtle and a Pomegranate which I have grown in boxes for years and wintered in the cellar, but they are not doing well and they did not blossom last year. What had I better do with them?"

If they are in fairly good health let them alone till next spring, then just as their wood buds begin to swell, cut the plants in pretty well, turn them out of their boxes, shake away all the old soil from the roots, and return the plants to those or other boxes, using fresh, fibrous, loamy soil with rotted leaf-mold mixed with it, and observe that the boxes be barely big enough to hold the roots comfortably. Better use a small box and shift a little later into a larger one, than over-box your plants.

ZEPHYRANTHUSES CROWDED IN POTS.

"I have a six-inch pot so full of pink Zephyranthuses that the bulbs appear to be crowded in it. Should I shift the whole mass into a larger pot, or divide and repot into more pots?"

Shift into an eight-inch pot; that will not much disturb their blooming, and then when they get pot-bound again, divide the mass and repot into the six-inch pots. Bulbous plants cultivated in pots should not have very much pot room if you want a full crop of flowers.

GLOXINIAS AND BEGONIAS.

"I wintered my Gloxinia and Begonia bulbs in shallow boxes with a little dry earth over and about them, as you advised, and kept them in the cellar. The cellar is a dry one; nothing ever freezes in it, and Geraniums, Roses and Chrysanthemums live and sprout in it, but all my Gloxinias died; all Begonias lived. What was the cause?"

Cold. A merely frost-proof cellar is not warm enough for Gloxinias; they should be kept in a winter temperature of 45° to 55° and the last is the better one. Tuberous-rooted Begonias are very much hardier than Gloxinias; indeed, away from frost is all the winter temperature they need. I now have Gloxinias in bloom in pots and have had others in bloom all summer, also I have 360 square feet of cold-frames occupied by Gloxinias, and half of them were wintered as recommended to our correspondent, except in a high temperature, and that, too, without losing one bulb; the other half are from seeds sown or cuttings made last spring. For cuttings I used the sprouts that grew on some of the "bulbs" while they were yet in their winter boxes.

A THERMOMETER.

This costs only a few cents, and if one has to winter plants in the cellar it will pay to have a thermometer in it. Many plants, Geraniums for instance, will bear with impunity a little frost, whereas Gloxinias, Achimenes, Tydæas and the like cannot be wintered with certainty in a temperature of less than 45°, and if some degrees higher so much the better.

GESNERA.

"I want a Gesnera. What one had I better get and how treat it? I have nice, south-facing windows and warm rooms."

Get *Gesnera exoniensis*. Treat as you would an Achimenes, only keep it a little warmer in winter, and in summer keep it away from strong sunshine. It rests in winter, starts to grow in spring, and blossoms, according to treatment, from July till the month of October.

GERANIUMS.

"Last winter I had Geraniums in bloom in the house from November till spring. They were raised from cuttings in June and grown in tin cans, and they blossomed better than any I ever before had grown. In the fall I lifted and potted some other Geraniums as carefully as I could, and grew them in winter in the same windows as I did the June-struck cuttings, and they did not have a sign of bloom till the end of March. Hereafter I always shall start my cuttings in June for winter flowers."

We who have greenhouses do nearly the same thing. WM. FALCONER.

HELIOTROPES FOR WINTER BLOOMING.

Heliotropes are largely used for cutting in winter, and when properly grown are exceedingly productive. My method for producing Heliotrope flowers in winter is different from that generally practiced, and as it is particularly adapted to the use of those who have little room, I will give it in detail.

For plants which are wanted to bloom in December, I usually begin by putting in a good supply of cuttings early in August. In a cool, shaded house, if the cuttings are soft, thrifty shoots, they will root readily at this season, and by the latter part of the month should be potted into two-inch pots, using a compost of decomposed sod and manure. As soon as they start into vigorous growth pinch out the tips, which will make them grow bushy.

As soon as the small pots are well-filled with roots, shift the plants into four-inch pots; place them close to the glass and in full sunlight, and give plenty of air to avoid having the plants drawn, and give a night temperature of 60° to 65°. Pay strict attention to watering, and keeping down red spider and green fly. Heliotropes will not stand strong fumigation, and it is better, therefore, to use a decoction of tobacco for syringing to keep down the aphis. If well treated, these plants ought to be in full bloom by December 1st.

When the main part of the flowers have been cut and the plants appear enfeebled, cut them down to within three inches of the pot, shake them out of the old soil, and repot in same pots with new compost. They will soon start into a fresh growth and give another profuse crop of flowers by February. After this bloom is over, cut the plants back, but do not shake them out, and the result is that by bedding-out time they are compact little bushes ready to go out and bloom all summer.

To follow up the plants which bloom early in December, I put in another batch of cuttings about September 1st, so as to have them bloom when the first ones have been cut down. By this method I always have an abundance of flowers. It will be seen that our Heliotropes never get into a larger pot than the four-inch size, and the quantity of bloom that can be taken from them is a surprise to anyone who has never tried it.

For this method it is important to use varieties which are naturally dwarf in habit. The most profuse bloomer I have ever tried is the Snow Wreath, but the best flowers are produced by a dark variety raised here in Baltimore, called Lizzie Cook. Baltimore florists use it almost exclusively. With this variety and Snow Wreath I have produced over 6,000 heads of flowers, on a table four feet by 16, during the months of frost.

WM. F. MASSEY.

SOWING CINERARIAS AND CALCEOLARIAS.

There is no great difficulty in starting these beautiful plants. Prepare a pan of light soil, on the top of which spread about one-eighth of an inch of finely sifted Sphagnum Moss. Old, dry Moss rubbed through a No. 4 sieve is best. After watering copiously, sow the seed on the top, and cover the pan with a pane of glass; place in a shaded greenhouse and no more water will generally be needed until the seedlings appear. Seed sown during August and September will make grand plants for spring blooming. *

ASPARAGUS TENUISSIMUS.

Nothing can exceed the feathery grace of foliage of this most beautiful of all vines for pot culture, and it grows up a string nearly as fast as Smilax. It keeps fresh so long after cutting that it is particularly desirable as a green for bouquet making. One of the most handsome and unique bridal bouquets we ever saw was composed of Niphetos Rose-buds just shadowed over with a filmy veil of the downy foliage of *Asparagus tenuissimus*. This plant grows so readily from cuttings that it will soon become plentiful.

THE STAG-HORN FERNS.

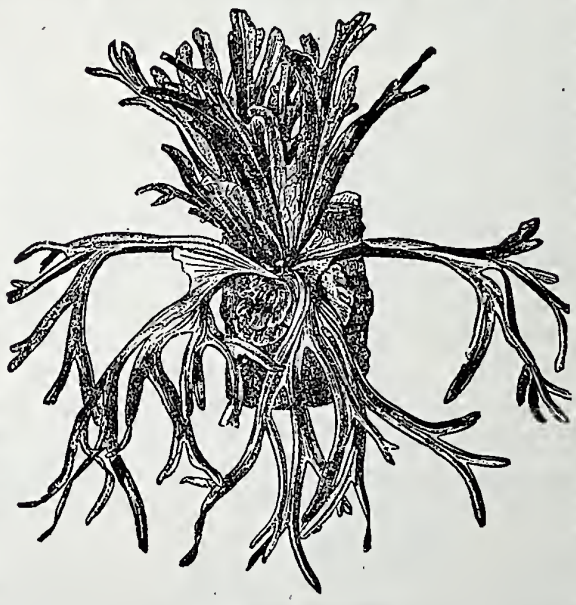
These singular and beautiful Ferns have lately come into more frequent use for decorative purposes, and a large, well-grown plant is indeed a most attractive sight in the conservatory or parlor. It is generally supposed that these Ferns cannot be grown as window plants, but such is not the case, as, to the contrary, there are few plants which accommodate themselves so readily to various conditions of temperature and moisture.

Platycerium alcicorne, the true Stag-horn Fern, and the kind most frequently seen in cultivation, is a native of New South Wales, where it is found growing on the trunks of trees, and therefore under cultivation it succeeds best and appears to best advantage when grown on blocks of wood or stems of Tree Ferns. But it may also be cultivated in pots containing plenty of potsherds and pieces of charcoal, and a soil consisting of leaf-mold and sand.

A larger, and as yet rarer species, is *P. grande*, the Elk's Horn Fern, of the grandeur of which our greenhouse specimens convey hardly an adequate conception. Of this, F. W. Burbidge, the well-known botanist, says in his work of travels in Borneo:

"I resided for some time in a house which had been occupied by Mr. Hugh Low, the garden and fruit orchard of which afforded me most delightful walks morning and evening. I never saw the Elk's Horn Fern so luxuriant anywhere as it was on the trunks of some large Orange-trees here. The barren fronds were broad, like the horns of the giant Irish elk, and the more slender, fertile ones drooped on all sides from the base of the nest formed by the leafy expansions. I measured some of these fertile fronds, and found them fully *seven* feet in length. These splendid Ferns, and the choicest of epiphytal Orchids, which had been planted among the branches of trees, made a walk among them most enjoyable."

The species of this genus are few in number, nearly all tropical; the two named above and *P. biforme*, *P. Aethiopicum*, and *P. Wallichii* are the best known.



PLATYCERIUM ALCICORNE.

FORCING LILIES.

LILIUM CANDIDUM.

In forcing *Lilium candidum* it must be remembered that the best success can only be had by lifting the bulbs at their dormant state, which is in July and August just after their flower stems have ripened. If lifting the bulbs is deferred until after they have made their crown of foliage which remains green through the winter, little success need be expected.

Lift when dormant and pot in a soil largely composed of leaf-mold and sand. Animal manures are injurious to all Lilies. Keep them well watered but moderately cool overhead until the pots are well filled with roots. As a rule no plant can be successfully forced into bloom until the pot is full of good working roots. This is the great secret of successful forcing. Even persons who ought to know better, shift plants from a small pot into a large one and put it at once into a forcing temperature, with the result of sour soil and unhealthy plants with little bloom. If you have a good plant with a pot full of healthy roots you may give heat and stimulating manures freely, but not otherwise.

THE BERMUDA LILY.

This Lily, also known as *Lilium Harrisii*, may be treated as *L. candidum*, with the exception that where growing in the open ground they will not be ready to lift before October. The bulbs which were forced early last winter and allowed to complete their growth and ripen off in pots, should now be shaken out and potted in fresh soil, giving them the same treatment as recommended above.

This Lily and the old *L. longiflorum*, and in fact all true Lilies, may be forced year after year if properly ripened off after blooming, and where care is taken to injure the roots as little as possible in shifting. A good practice is to simply shake off the top soil from the ball and repot without separating the bulbs for several years until thought too large. In this way it is not rare to have ten stalks in a pot, of *L. longiflorum* producing from three to six flowers each. *

POTTED PLANTS AND COMPOST.

When potted plants become pot-bound, says Wm. Beckman in the N. Y. Tribune, the effect is seen in checked growth, yellow foliage and imperfect blooms. They should then be repotted in a size larger, or the ball of earth set into water with the chill off, until the earth dissolves from the roots, then repotted in a pot of the same size, with fresh soil and shaded for a few days until the roots get established. I have often treated plants in bloom in this way without injury.

When the pots get green they should be washed inside and out; a few hours' soaking will loosen the coating, when it may be washed off with a rag or brush. Plants always grow best in clean pots. Rooted cuttings should not be potted in too large pots; 2½-inch pots are usually large enough; I have seen men pot cuttings in six and eight-inch pots.

The best soil for plants is pasture sods pared thinly and laid in a pile to decay. If kept wet and turned over several times, it will be just right for winter use. Plants luxuriate in such soil. A mixture of one-third old cow-manure with it, is fine for blooming plants.

CALLAS FOR EASTER.

Plants which have been kept dry should now be shaken out of the old soil, cleared from dead roots and off-sets, potted in five and six-inch pots, and left out doors on a bed of coal ashes until cold weather sets in. Usually it is better not to try to hurry them into bloom, but to keep them in a moderately cool house. About six weeks before Easter they have to be placed in a light, warm house with a temperature of 60° at night, watered with tepid water and liquid manure twice a week. Syringe twice a day to keep down red spiders. By this treatment the bulk of their flowers may be had in bloom when they are most appreciated.

*

THE NEW DWARF STEVIA.

Stevia serrata nana.

Those who have grown the old Stevia know what an amount of trouble is required to keep it compact by constant pinching. This new variety which was raised by Mr. Fistler, gardener at the White House, is a decided improvement on the old form. It produces a denser mass of flowers, never grows over 18 inches high, and we have seen it in ten-inch pots standing not over 12 inches above the rim, and measuring the same through the head without having been pinched in.

OUR WINDOW BOX.

For floral decorations of all kinds there is an increasing inclination for distinct colors.

Rose's Tobacco Extract Insecticide Soap is an excellent remedy for green fly and other insects infesting house plants, and much more conveniently applied than fumigation.

Insufficient drainage is a frequent cause of failure with pot-plants. The remedy is repotting and in so doing using plenty small pieces of broken pots or small lumps of charcoal in the pot.

Geraniums raised from cuttings this spring should now be potted in four-inch pots. If kept in a healthy growing condition they will make beautiful growing plants for the house when frost kills our out-door flowers.

Not more than one flower bud of Camellias should be allowed on each terminal shoot, if size and perfection of flower are required. Remove all others before the buds begin to swell; if delayed longer, little advantage is gained.

Orchids are becoming more and more fashionable, and many of our rich belles don't hesitate to pay $20 and more for a single spray to wear at a reception or party, as long as it is fashionable and becoming. Well, the money does somebody good, and they might spend it for worse purposes.

Lawn and Landscape.

TRANSPLANTING GRASS.

Few persons may have considered that grass can be propagated in any other way than by sowing the seed, or by sodding. But I have learned, after many years' experience, that there is no more satisfactory way of making a beautiful lawn of clean grass—a lawn that will be absolutely free from weeds—than by establishing a firm and complete turf by transplanting the roots of grass. When a lawn is sodded—which is an exceedingly expensive way to produce grass—there will usually be numerous weeds in the sods, which will cause an untold amount of trouble; but when a lawn is properly prepared by digging, and pulverizing the soil, and grass roots are planted, no troublesome weeds will ever appear.

This method is of special value in dry, sandy soil, and the grass best suited for this purpose is the White Bent-grass, *Agrostis alba*. I have frequently observed how rapidly this grass would spread in pure sand, where it was not disturbed, covering in a single season several square rods with beautiful green turf, where there was nothing but sand. Those who find difficulty in establishing lawns free from troublesome weeds, may dig up their lawns, manure them generously, rake the surface over and over, for several months in succession, and then dig up the roots of the *Agrostis alba*, and transplant them just as Cabbage plants.

Small pieces of roots are planted about 20 inches or two feet apart each way, in mellow ground, and the surface is kept clean and free from weeds, between the grass-plants, until the spreading roots have covered the entire lawn.

In many parts of New Jersey the soil is so sandy and barren, that even Horse Sorrel or the White Daisy will not grow. Yet this grass if allowed to grow *ad libitum*, will soon change an arid sand-plot to a luxuriant green carpet.

The White Bent-grass resembles the Red-top, *Agrostis vulgaris*, except in the color of the panicles, which are red in the Red-top, and of a very light color in the White Bent. Its roots spread by stoles, or stolons having joints every inch, or a few inches apart. Every joint, if transplanted during the growing season, will soon send up tender blades of grass, and begin to throw out young roots; and as the roots spread, spears of grass will come from almost every joint, until a firm turf has been established all over the ground. Such a lawn, if well cultivated until the grass covers the whole surface, will be permanent, and entirely free from weeds and unsightly spots.

S. E. T.

EFFECTIVE PLANTING.

One of the most desirable results of well-directed efforts in landscape gardening is the forming of beautiful natural pictures. The curving of paths through closely-shaved lawns, the planting of specimen shrubs, and the cutting out of geometric flower-beds is common enough, and constitutes, with level grading, the bulk of the art as seen around villages and cities, but unfortunately little or no attention is given to background relief or the relative position of trees and shrubs.

It is a great pity that more attention is not paid to this matter, as some of the most beautiful effects can be produced with very little expense,—generally with the same materials used in indiscriminate planting,—which will give an individuality to the place, difficult or impossible to attain with ordinary hit-and-miss planting. As a general thing a man buys a Cut-Leaved Birch, a Weigelia or Hydrangea, not because he has a place peculiarly adapted to any of them, but because his neighbor has one; because it looks pretty in the agent's plate book; or because it is included in somebody's list of trees and shrubs suitable for suburban grounds.

In re-arranging old grounds very marked effects can often be produced by using the older plantings for a background to the new. In many places beautiful old evergreens stand in positions where they can be made to serve as background from three or four directions for some tree with marked characteristics. If the side next the street is available, a White Dogwood, a Hawthorn or a Siberian Crab may be planted in range; from some other vantage point a Purple Beech or a White Birch may be brought in line; while from the house side it may serve as a background to a *Cornus sanguinea* or a Snowball.

The many ways in which evergreens can be utilized as backgrounds make them particularly valuable. The American Arbor Vitæ makes a high, close screen, taking but little room at the base, and while it may be made to hide a barnyard in the rear, its front side may bring out in strong relief any bright or beautiful object, from a Peony, or group of double Hollyhocks, up to a Syringa or a Pear-tree. If the evergreens that are scattered in unmeaning profusion on many front lawns could be gathered in irregular groups at the rear and sides of the house, leaving irregular nooks for the placing of showy shrubs and flower-beds, the general effect would be greatly improved, while at the same time the care of the lawn would be simplified and cheapened.

I cannot endeavor to enumerate the endless changes that can be produced by judicious planting, nor is it necessary, as chance examples may be seen everywhere, often as a Dogwood in the edge of a forest, or a Lilac in front of a Crab Apple, common to be sure, yet beautiful notwithstanding.

L. B. PIERCE.

A HARMFUL PHASE OF TREE SENTIMENTALITY.

There is a sentimentality which often makes itself manifest in regard to trees, which is likely, if not corrected, to do more harm than good to the cause of tree-culture and forest preservation. There is nothing sacred about a tree in itself, says the editor of Outing in the July number, and there is no more harm in cutting it down, when occasion demands, than there is, under the present conditions of civilization, in killing an ox for food.

The true friends of forest preservation seek to perpetuate the forests for the sake of mankind, that the timber-supply may be preserved and the equilibrium wisely established by nature may be maintained for the benefit of the climate and the soil, and for the prevention of disastrous floods. To this end we must make judicious use of the gifts which God has given us in the forests, neither squandering them on the one hand nor making idols of them on the other. It is the wanton waste of life, be it vegetable or animal, which is a crime against nature. Our actions, however, must be governed by a regard for the interests of man, and not by a false sentiment for the "rights of the trees." If a tree be in the way,—if, for instance, it shades a dwelling so as to make it dark, damp, and unhealthy,—it should come down. To keep a tree in the wrong place is a vandalism only second to that which destroys tree-life indiscriminately.

A hue and cry is now and then raised through a failure to understand this distinction. A case in point is that of the recent cutting down of some trees in the grounds of the Capitol at Washington, which caused the eminent landscape-architect having the matter in charge to be vigorously denounced for his action. The facts in the case are, however, that the design for the grounds, made on a scale worthy of the noble building which they environ, contemplated a broad mall from the end of Pennsylvania avenue to the foot of the Capitol terrace. This was on the line of a narrow path which was bordered by some fine trees. Some of these were left to furnish shade while the rows of trees bordering the mall were growing. The latter having become large enough to give good shade, and it being time for the completion of the improvement, and, moreover, as the old trees were crowding and injuring the new ones, their removal was ordered. Certain newspaper correspondents seeing this, and not knowing what was intended by the new design, straightway telegraphed the story of the vandalism over the country.

PRUNING EVERGREENS.

In nothing has progress in arboriculture been better indicated than in the use of the pruning-knife on evergreens. Up to within a recent period one might prune any trees except evergreens, and few articles ever took the public more by surprise, says Thomas Meehan in the Gardener's Monthly, than our first paper showing that pruning benefited these plants. Now it is generally practiced, and it is believed to be followed with more striking results than when used on deciduous trees.

In transplanting evergreens of all kinds from the woods, the best way to save their lives, is to cut them half back with hedge shears, and when any come from the nurseries with bad roots which have accidentally become dry, a severe cutting back will save them. And then if we have an unsightly evergreen—a one-sided or sparsely-clothed evergreen—if it is cut back considerably it will push out again green all over, and make a nice tree. It must be carefully remembered, however, that in all these cases the leading shoot must be cut away also.

An idea prevails that a new leading shoot will not come out on the Pine family after one has lost its first. But this is a mistake; sometimes they will not show a disposition to do so; side shoots near the leader's place will seem to put in rival claim for the leadership the following year, but if these are then cut away they will not make a second attempt, and the real leader will push on.

Exhibitions & Societies.

MASSACHUSETTS HORTICULTURAL SOCIETY.

Rose and Strawberry Exhibition.

Notwithstanding the unusual lateness of the season, and the dry weather which had a most injurious effect upon Roses and Strawberries, the exhibition of the 25th and 26th of June proved a grand success.

The exhibition of plants in the upper hall was arranged with great taste, for which the committee of arrangements deserve much credit. The Orchids from Messrs. Ames and Gilman, formed a bank on the stage, with a background of Palms and other fine foliage plants, and groups of similar plants arranged on stages in front of each window. In the spaces between the windows were stands for the general displays of Roses and other cut flowers. The prize Roses were arranged on two long tables, forming an extended array of beauty, the center being broken with smaller tables containing Orchids and other plants. The display of Orchids was by general consent declared the largest ever made, which we have not the space to describe.

To anyone who has never had the good fortune to attend a Boston Rose Show, it would be difficult to convey anything like a correct impression of the excellence, beauty and quantity of Roses shown here in "Flora's temple." The prizes for Roses have been taken, to a very large extent, by John B. Moore & Son. The first special prize for the best twenty-four varieties, three blooms of each, was also awarded to this firm. The collection consisted of: Abel Carrière, Alfred Colomb, Baroness Rothschild, Charles Lefebvre, Etienne Levet, François Michelon, Horace Vernet, Mabel Morrison, Mme. Eugène Verdier, Mme. Gabriel Luizet, Mme. Victor Verdier, Marguerite de St. Amande, Marquise de Castellane, Marguerite de Roman, Merveille de Lyon, Pierre Notting, Queen of Queens, Sir Garnet Wolseley, E. Y. Teas, George Moreau, Mme. Marie Rady, La Rosière, Ulrich Brunner, Victor Verdier. The second prize was awarded to W. H. Spooner. The other principal exhibitors of Roses were John L. Gardner, J. S. Richards, David Allan, C. M. Hovey, Benj. G. Smith.

The next table was filled by William A. Manda of the Cambridge Botanic Garden, who had a plant of *Cattleya Mossiæ* remarkably full of flowers, *Brassia verrucosa*, *Thunia Bensoniæ*, *Leontopodium album* (the Edelweiss of the Alps) and *Dionæa muscipula*, or Venus's fly trap. S. R. Payson exhibited a variety of Orchids, Anthuriums, Gloxinias, etc. The Sweet-Williams from E. Sheppard, which took first prize, were remarkably fine.

The first prize for the best specimen plant (not Orchid) was awarded to David Allan for *Erica Cavendishii*, second to F. L. Ames for *Utricularia montana*; for the best foliage or flowering plant (not Orchid) to F. L. Ames, *Dichorisandria mosaica*.

The fruits and vegetables were arrayed in the lower hall, the former consisting mostly of Strawberries. P. M. Augur and Son, Middlefield, Conn., carried off the Silver Medal for the best seedling Strawberry introduced within five years, with their Jewell, which is really a most valuable variety. The first prize for the best four quarts of any variety was awarded to George Hill, for Sharpless, the second to Geo. V. Fletcher for same variety. The varieties principally entered for competition were Sharpless, Bidwell, Charles Downing, Cumberland, Hervey Davis, Hovey, Jucunda, Miner's Prolific, Seth Boyden, Champion, Crescent, Jersey Queen, and Manchester; and the leading prizes were awarded to Geo. V. Fletcher, Wm. Patterson, E. W. Wood, C. M. Hovey, B. G. Smith, J. D. Fitts, John B. Moore & Son, C. E. Grant, George Hill, B. Judkins, L. W. Weston, Wm. Patterson and Warren Henstis and others.

AMERICAN INSTITUTE FARMERS' CLUB.

The meeting of the Club on June 19th, held in connection with the Strawberry and Rose Exhibition reported in our last issue, was of unusual interest, and we doubt whether a meeting for the discussion of the Strawberry was ever held anywhere at which so many prominent experienced Strawberry growers were present and contributed to the general fund of information.

After a few appropriate remarks by Dr. F. M. Hexamer, the President of the Club, relating to the new home, and the objects and aims of the Club, Mr. E. P. Roe opened the discussion.

Mr. Roe said that development and improvement of the Strawberry is slow. He had abandoned the idea maintained a few years ago that all the varieties of the day were soon to be superseded by new and better ones, and the old kinds to be plowed under. Great names and endorsements on paper do not make a variety great, nature alone can make it so, and if it has not real intrinsic merit it will soon be discarded. In our endeavors for improvement we have to observe three principal points:

1.—Development in the Strawberry should be sought in the line of native stock; little is to be hoped from importations. The highest excellence of foreign Strawberries is combined in Triomphe de Gand, and its equal has yet to be found. The leading qualities to be aimed at are beauty, firmness, flavor; without these, size is nothing.

2.—We should not discard the old standard varieties that have stood the test of many years. Varieties like Charles Downing cannot easily be surpassed. Typical plants of such should be singled out and grown on fair Strawberry land to start a new and vigorous strain from, and not plants from everything and anything.

3.—In developing new varieties we should have in mind that they are not intended for millionaires but for the people. For propagation, fair, dry soil should be chosen, such as would not be considered fit for the very highest cultivation; and only selected plants should be used for the purpose. Plants grown on a very rich soil will, as a rule, fail on poor and sandy soil, while those that have sufficient inherent vigor in them will make their way; like some young men make their way in spite of everything, they make chance. The right kind to succeed will grow even under adverse conditions. The old Champion, for instance, is a good variety to use as a mother, if crossed with rich, high-flavored varieties.

E. W. Durand, the originator of Jersey Queen, Prince of Berries, Black Defiance, and many other valuable varieties, thought there was something like intuition that guided him in the selection of varieties for crossing, and that it required constant attention and application to accomplish anything in this direction. Most varieties change, the foliage giving way to the fruit. The change may be so gradual that it becomes impossible to foretell the fixed, permanent character of a new variety before six or even ten years, and he had known seedlings to retrograde even after such a period. To expect much improvement from chance seedlings he considered a fallacy.

Chas. A. Green, editor of Green's Fruit Grower, stated that the crop in western New York was very promising, that the berries were ripening rather late, but with frequent and timely showers the season had been the most favorable for many years. Their plants were covered in winter by snow and came out in fine condition in spring; all the standard varieties promised good yields; for their main crops they relied upon Vick and Manchester, varieties that had never failed them.

P. T. Quinn was satisfied with his crop. On seven acres of ground near Newark, N. J., he raised 1,000 bushels of Strawberries last year, and expects to do nearly the same this season. Whoever expects to make money in Strawberry growing must have good land, deep soil, give high manuring, and be convenient to a good market. Southern Strawberries have entirely revolutionized northern Strawberry culture. So far only two varieties, the Wilson and Neunan, have been found adapted for cultivation at the South, and at the North, earliness is not the leading consideration, as was formerly the case. After experimenting with every new variety as it became introduced, he finds the Charles Downing still the most profitable Strawberry to grow for market. Berries are grown for the masses, therefore we must have varieties which yield enough so that they can be sold within the means of the masses, at a retail price of from eight to twenty cents. The average net cost of his berries to him he estimates at six to seven cents a quart.

Summer planting he has abandoned entirely and plants now in spring exclusively. The plants are set fifteen inches apart in rows four to five feet apart, and allowed to run. They are always mulched in the fall, the covering being removed in the spring, the ground cultivated lightly and the mulch replaced between the rows before picking. The speaker was convinced that Strawberry culture will yield a fair profit if intelligently followed and proper application is given to it; and that even in seasons of light crops there is always that compensation that what crop there is will bring better prices.

P. M. Augur, State Pomologist of Connecticut, did not favor cultivation in spring, and held that the less the soil is disturbed in spring the better; would only pull the weeds that made their appearance. Of the importance of mulching he was fully convinced, having observed that all the plants that had been mulched last winter were doing well, while those left uncovered were more or less seriously injured.

In this, E. P. Roe, E. W. Durand, Wm. Parry, A. S. Fuller, Dr. J. B. Ward, Sam. Parsons, J. B. Rogers, and most of those present concurred, admitting that if the

ground were to be stirred at all in spring it should not be done deeper than one-eighth of an inch, and never after blossoms appear.

A. S. Fuller spoke on fertilization and the influence of the pollen on the berry. In his usual clear and concise manner he described the construction of Strawberry blossoms, and the differences between staminate and pistillate varieties. That the influence of the pollen reaches further than the seed, and that the berry itself becomes affected by the pollen, he had become convinced of more than twenty years ago. Several instances in proof thereof were cited, and the fact that when pollen is not applied to imperfect flowers the blossoms wither and the stems die, while when after pollen is applied the fruit stems expand and become more vigorous, shows plainly that the whole plant becomes changed by fertilization.

It was voted not to hold any meetings during July and August. The next regular meeting is on the second Tuesday in September.

SOCIETY OF AMERICAN FLORISTS.

The first annual meeting of this Society, to be held at Music Hall, Cincinnati, August 12th to 14th, promises to become the most interesting gathering of the kind ever held in this country. The officers in preparing their programme for the occasion have very wisely not followed the familiar beaten tracks, but boldly strike out for new and unique features. The papers to be read and discussed form an important epoch in the annals of floriculture, coming as they do from acknowledged masters of the subjects presented. The exhibition of plants and flowers will be unique in character, different materially from any previous exhibition ever made in this country. It is the earnest desire that all members having seedlings, novelties, or plants of merit will not hesitate to exhibit them. *No plant or flower* of merit will be unrewarded. There will also be exhibitions of implements and appliances used in floriculture, heating apparatus, florists' requisites, artists' work related to floriculture in any and every branch.

Among the papers will be: "Forcing of Bulbs and Plants for Winter Use," by Carl Jurgens, Newport, R. I.; "Diseases of Plants and their Remedies," by Charles Henderson, Jersey City, N. J.; "On the Floral Embellishment of Parks and Gardens," by H. DeVry, Superintendent of Lincoln Park, Chicago; "The Cut Flower Trade. Sale, shipment, packing, and the mutual interests of Grower, Commission-man and Retailer," by Wm. J. Stewart, Boston, Mass.; "Roses. The Propagation of Tea Roses, their Subsequent Treatment, and the Raising of New Varieties," by Jno. May, Summit, N. J.; "What shall we Grow for Early Spring and Summer Cut Flowers?" by Henry Michel, St. Louis, Mo.; "Steam vs. Hot Water for Heating Greenhouses," by Jno. Thorpe, Queens, N. Y.; "Pioneer Florists," by S. S. Jackson, of Cincinnati.

A richer bill of fare could hardly be desired by the most fastidious floricultural epicure, and from the well-known ability of the essayists a rare treat may be counted upon. Circulars and more detailed information may be obtained from the President, John Thorpe, Queens, N. Y., or the Secretary, E. G. Hill, Richmond, Ind.

OUR BOOK TABLE.

Architecture Simplified, Geo. W. Ogilvie, Chicago. A small pamphlet of 60 pages, containing a good selection of house plans, from the most modest cottage to the elaborate suburban dwelling-house; also many useful tables about building.

Fifty Years Among Small Fruits, by Wm. Parry, Parry P. O., N. J.—In this pamphlet the author, who is one of the most experienced and skilful fruit growers in the country, gives in a condensed form the results of a life time in fruit growing, and describes the methods now followed at the Pomona Nurseries. Each class of small fruits is treated separately, together with descriptions and illustrations of the leading varieties.

Good Housekeeping, the new fortnightly journal "of the higher life of the household," fulfills the promise of its prospectus, and might well be the crowning effort of the useful life of its projector, Mr. Clark W. Bryan. It is so nearly perfect that we see no room for improvement. The family who could not live a better life with it as a constant visitor is already perfect, or below the reach of good influence. It is one of the few papers that, in a very busy life, we always look over carefully when it comes to our desk. Clark W. Bryan & Co., Holyoke, Mass.

Mushrooms of America, edible and poisonous, by Julius A. Palmer, Jr. L. Prang & Co., Boston, Publishers. We have frequently had occasion to favorably notice the beautiful publications of this house, but none we have hailed with as much delight and satisfaction as this. What a relief to be able to refer the innumerable inquirers about "how to tell an edible Mushroom from a poisonous one" to this excellent work, which will give them the answer at a glance. The colored illustrations, of which there are twelve, comprising twenty-eight species of our most common native Mushrooms, are so accurate and life-like that no one can mistake one for another; and the descriptions, the result of the author's many years' careful study, are given in so clear and plain a manner that anyone without any previous botanical knowledge may understand them. The value of this work for schools cannot well be over-estimated; the framed plates should find a place on the walls of every school-room in the land. The work is also published in smaller plates in strong and convenient portfolio. Price $2.00.

ANSWERS TO CORRESPONDENTS.

Moss-Covered Trees.—*F. R., Westchester.* If the moss is thick on the trees it should be scraped off with a hoe, but not so hard as to injure the bark. Then the stem should be washed with a solution of potash in water, or strong alkaline soap-suds.

Manuring Lilies.—*N. T. L., Astoria, N. Y.*—Fresh animal manures are, as a general rule, injurious to Lilies, especially when the bulbs are in a dormant state, but to a vigorous-growing potted Lily of any kind, an application of weak liquid manure, once a week, can bring no possible harm.

Squash borers.—*S. P., Flushing, N. Y.*—Paris green has been used with success at the N. Y. Experiment Station. Vines that were sprinkled with Paris green and water were not attacked by borers. No possible danger can arise from this, as none of the parts of the plants to which the poison is applied are used.

English Walnut.—*D. D., Ringville, Canada.* The tree is not a native of England, as its popular name would lead us to suppose, but of Persia and other parts of Asia. There are some large specimens in the vicinity of New York, but it is very doubtful whether the tree will survive Canadian winters. Seeds of *Ampelopsis Veitchii* may be obtained from any good seed-house.

Failure with Lilies.—*M. C. C., Baltimore.*—Without a knowledge of all the conditions under which the bulbs are placed, it is impossible to tell why they fail. A frequent cause of failure with spring-planted Lilies, is that the bulbs have been kept out of the ground over winter. The sooner, after being taken up, they are planted the better, and it is for this reason that fall planting is preferred by many. *Lilium candidum* should always be planted in the fall.

Sowing Onions in Autumn.—*L. R. D., Buffalo, Wyoming Ty.* The great essential point in sowing Onion seed in spring is to get it in the ground as early as possible. It is useless to expect a satisfactory crop after the weather becomes warm. Your spring season is probably too short for successful Onion growing, and it would be well to try the experiment of fall sowing. Sow about a month before winter sets in, and after the ground becomes frozen, mulch with straw or some other suitable material.

A Flooded Garden.—*Mrs. T. P., Laprairie, Canada*, writes: "When a garden is flooded with icy water semi-annually—spring and autumn—could one hope in any reason to successfully grow any sort of bulbous plants therein?" This is a discouraging case, to be sure, yet not a hopeless one. If the water cannot be drained off, the next best thing to do is to make raised beds, the surface of which should be not less than one foot above the highest water level. Such a position should prove congenial to almost any kind of bulbs.

Some Good Chrysanthemums.—*L. H., New York.* The list of good varieties is now so large that it is not an easy matter to select a few only that would be considered best by everyone, yet the following cannot fail to give satisfaction: Elaine, white; Fair Maid of Guernsey, white; Gloire Rayonnante, satiny rose, quilled; M. Planchenau, mauve; Julius Scharff, violet amaranth; Stratum perfectum, rosy lilac; Mad. C. Andiginer, rosy pink; Bouquet Fait, rosy lilac; Jardin des Plantes, yellow; Julia Lagravere, velvety crimson; Kira Kana, chrome.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

Stephen Hoyt of Canaan, Ct., says the nurseries of that State are well supplied with small fruit stock, with a small surplus.

Hance & Borden of Red Bank, N. J., keep a sort of advisory bureau for city customers at their city office at 22 Dey Street, New York.

J. G. Burrow, Fishkill, N. Y., thinks there will be a good crop of Grapes and young vines this fall. The Strawberry crop in that vicinity was a complete failure.

The Bowker Fertilizer Co. report a larger trade during the past season than in any previous year since they began. This is good proof of the quality of their goods.

Benjamin Hammond, Fishkill, N. Y., the "Sing Shot" manufacturer, now offers "Thripp Juice" as quick death to insects infecting ornamental trees, especially the Elm.

Boston manufacturers of heating apparatus for greenhouses, etc., state that trade in their line is rather dull, much more so than in many previous years. They say that but few new conservatories are in course of erection.

Storrs & Harrison, Painesville, O., report an unusually large plant trade during the past season, and feel quite happy over the result. They anticipate a good trade next season, though admitting that the general outlook is not very promising.

W. C. Strong of Brighton, Mass., is establishing a new headquarters for his nurseries at Newton, under the superintendency of Mr. S. B. Green, late of Houghton Farm, and a graduate of the Massachusetts Agricultural College in 1879. Mr. Green is well fitted for the work by education and experience, and Mr. Strong has shown his usual good business sense in securing Mr. Green. He has had several of these college boys as superintendents in his nurseries, and evidently considers them profitable help.

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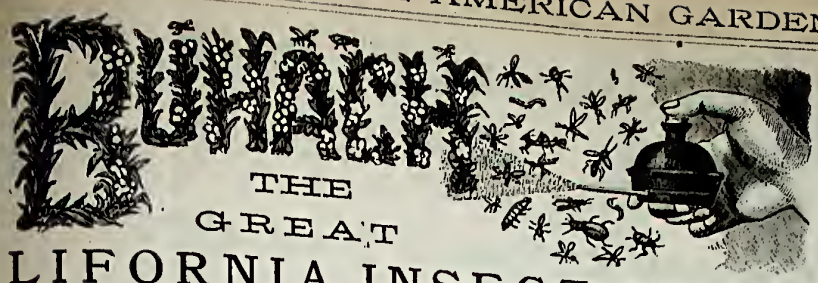
☞ **Waukesha is a delightful Summer Resort, on the Chicago, Milwaukee and St. Paul, and Chicago and Northwestern Railways.**



THE GREAT

CALIFORNIA INSECT POWDER.

Perfectly Harmless to Animal and Plant Life. Manufactured from the pure Pyrethrum Cinerariæ Folium Blossoms grown by us in California, where "Buhach" is Manufactured and Canned.

BUHACH has been carefully experimented with and has received the unqualified endorsement of the most eminent scientists and entomologists in this country, among whom we quote: Prof. C. V. Riley; Prof. A. J. Cook; Prof. E. W. Hilgard, University of California; Prof. J. Henry Comstock; Prof. Matthew Cook, late Chief Horticultural Officer of California; Prof. W. A. Henry; Elbert S. Carman, Editor "Rural New-Yorker," New York; A. S. Fuller; Dr. F. M. Hoxmaner.

The Dreaded Rose-Bug, impervious to Paris Green and all other Arsenical Compounds, gives up the ghost to BUHACH.

BUHACH POWDER will kill Rose-bugs. Last year it was blown upon them through bellows. This year we propose to use a Buhach extract, made by dissolving four ounces of the powder in a gill of alcohol and then adding one gallon of water, applied with force pump and "cyclone nozzle." We do know that Buhach will kill cabbage worms and the dreaded rose-bug.—*Rural New-Yorker*, April 25, 1885.

CABBAGE WORMS AND POTATO BEETLES. Prof. A. J. Cook says: I found Buhach efficient in destroying the Colorado potato beetles, the caterpillars of the cabbage butterfly and plant lice.

SLUGS, CATERPILLARS, GRUBS, ETC., ETC. I find it very fatal to slugs, caterpillars, grubs, flies, mosquitos, and both parasitic and plant lice.—*A. J. Cook, Entomological Laboratory, Agricultural College, Lansing, Mich.*

BUHACH, Safe and Sure Insecticide. I have been surprised by the effect produced on the hairy Tent-caterpillar by water containing the extract of 1 lb. of powder to 50 gals. They paid little attention to the bellows and powder, at least when the wind blew; but a sprinkle of the diluted extract promptly caused them to squirm, drop off, and finally die while attempting to crawl away.—*E. W. Hilgard, University of California.*

THE CURRANT WORM. Buhach, extended with plaster 50 times, kills the currant worm.—*Rural New-Yorker.*

DR. F. M. HEXAMER says: The efficacy of Buhach is so well known that its value as an insecticide is firmly established. We have lately experimented with it, and were highly pleased with the results. If properly applied it accomplishes all that is claimed for it, and has the great point in its favor that it is entirely harmless to human beings, as well as to house and farm animals.

MR. A. S. FULLER, Agricultural Editor "New York Sun," says: Some large climbing Roses that were badly infested with aphis and thrips were entirely cleared of their enemies by one dusting with **BUHACH.**

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PRICE OF BUHACH.—25 cents, 50 cents, 75 cents and $1.25, according to the size of cans. Insufflators, 25 cents each. Sent by mail, post-paid, on receipt of price. **Buhach** is sold by Druggists, Grocers, Florists and Seedsmen out of our 6 lb. cans at $1 per pound, or $4.50 per can of 6 lbs. Force Pump with ten feet of pipe and ten feet of rubber hose and one Cyclone spray nozzle, complete, ready for work, price $9.00. Extra Cyclone nozzles, each 75 cents. Bellows with attachments for dry applications, $2.00. Bellows with atomizer attachment for applying **Buhach** solution, $2.00.

If **Buhach** is not on sale in your neighborhood, send your orders direct to us. Be sure you get "**Buhach**" and that the can is an original package. Many dealers will insist on your trying "something better" or "as good." Don't take it. Stand firm, and use nothing but "**Buhach.**"

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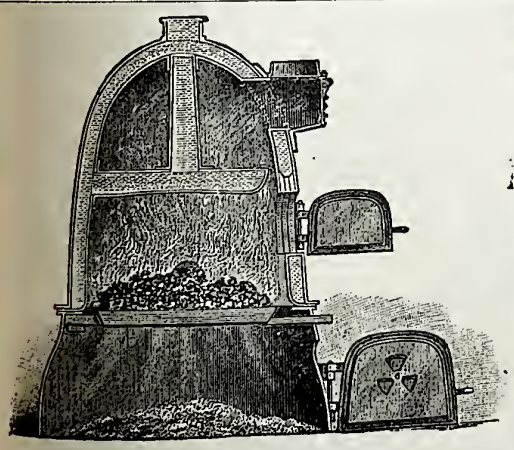

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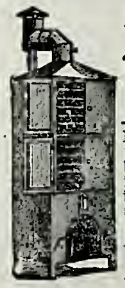

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Also other Small Fruits, and all old and new varieties of Grapes. Extra Quality. Warranted true. Cheap by mail. Low rate to dealers. Agents wanted.

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THE PNEUMATIC FRUIT DRIER OR EVAPORATOR.

Retains the natural fruit and vegetable flavor. The most rapid evaporation with the least fuel. It is the only Drier made in which the heat passes three times across the furnace.

Made in eight sizes for family and factory use.

Illustrated pamphlet FREE.

We also manufacture the best Evaporators for made APPLE JELLY from cider, without sugar or any foreign substance.

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Cheapest—Best, Fire and Waterproof. Adapted for new or old roofs. Anybody can apply. Write at ONCE for Book Circular. INDIANA PAINT AND ROOFING CO., NEW YORK.

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SEEDS Economy in the Garden. The best seeds, plants, bulbs and requisites at Lowest Prices. Catalogue free. HENRY A. DREER, 714 Chestnut Street, Phila.

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Special Bulb Collections,

FOR INDOOR AND OUTSIDE PLANTING.

The following assortments have been carefully prepared, and with a view to their wide dissemination, we have made the prices for each and every collection exceedingly low, in fact the prices are so much below what the bulbs are usually sold separately for, that the offers are only made on the understanding that no collection can be divided, or any alterations be permitted. Patrons wishing to make their own selections, can readily do so from the detailed lists, to be found in our Bulb Catalogue, and at the reasonable prices there asked. Only the best quality of Bulbs are put into these Collections.

Collection A. Price $3.00.

Contains 82 Bulbs of the following:

3 Hyacinths, double and single, named
5 " " " mixed
3 Tulips, " " named
6 " " " mixed
1 " variegated foliage
2 Narcissus, assorted named sorts
12 Crocus, assorted named sorts
18 " mixed
1 Amaryllis Formosissima
12 Anemones, double and single
1 Crown Imperial
1 Freesia Refracta Alba
3 Jonquils, double and single
6 Oxalis, mixed
3 Ranunculus, double mixed
2 Scillas
1 Lilium Auratum
1 Cyclamen

Sent by Express on receipt of price, or by mail, if 50c. is added for postage.

Collection B. Price $5.00.

Contains 172 Bulbs of the following:

[illegible] Hyacinths, named, double and single
" mixed, " "
[illegible] Tulips, named, " "
" mixed, " "
" variegated foliage
[illegible] Narcissus, assorted varieties, named
[illegible] Crocus, named sorts
" mixed
1 Amaryllis Formosissima
25 Anemones, double and single, mixed
1 Crown Imperial
2 Freesia Refracta Alba
6 Jonquils, double and single
12 Oxalis, mixed
6 Ranunculus, double mixed
3 Scillas, assorted
1 Lilium Auratum
1 " Lancifolium Roseum
6 Snowdrops, double and single
1 Cyclamen Persicum
2 Glory of the Snow (Chinodoxa)
1 Anemone Fulgenes Duplex

Sent by Express on receipt of price, or by mail, if 75c. is added for postage.

Collection C. Price $10.00.

Contains 310 Bulbs of the following:

[illegible] Hyacinths, named, double and single
" mixed, " "
[illegible] Tulips, named, " "
[illegible] mixed, " "
[illegible] variegated foliage
12 [illegible] assorted, named varieties
50 [illegible] named sorts, assorted
75 [illegible] mixed
1 [illegible] Azureum
1 Amaryllis Formosissima
25 Anemones, double and single
1 " Fulgens Duplex
1 Crown Imperial
3 Freesias, Refracta Alba
12 Jonquils, double and single
12 Oxalis, mixed
3 Ixias, "
3 Iris, "
12 Ranunculus, double mixed
6 Scillas, assorted
3 Sparaxis, mixed
12 Snowdrops, double and single
1 Lilium Auratum
1 " Lancifolium Rubrum
2 Cyclamen Persicum
2 Glory of the Snow (Chinodoxa)

Sent by Express on receipt of price, or by mail, if $1.25 is added for postage.

Collection D. Price $15.00.

Contains 457 Bulbs of the following:

18 Hya[illegible]ed, double and single
30 [illegible]ed, " "
18 Tuli[illegible]ed, " "
36 " [illegible]ed, " "
5 " [illegible]gated foliage
18 Narci[illegible]ed named
75 Croc[illegible]
100 " [illegible]
2 Amary[illegible]ed
2 Allium [illegible]
2 Anemone, Fulgens, Duplex
36 Anemones, double and single
3 Babianas, mixed
3 Bulbocodium Vernum
2 Crown Imperials, assorted
3 Eranthis Hyemalis
3 Freesias, Refracta Alba
18 Jonquils, double and single
3 Ixias, mixed
3 Iris, assorted
18 Oxalis, mixed
25 Ranunculus, double mixed
4 Scillas, assorted
3 Sparaxis, mixed
18 Snowdrops, double and single
3 Glory of the Snow (Chinodoxa)
3 Cyclamen Persicum
1 Lilium Auratum
1 " Harrisi
1 " Lancifolium Roseum

Sent by Express on receipt of price, or by mail, if $2.00 is added for postage.

Collection E. Price $20.00.

Contains 639 Bulbs of the following:

12 Hyacinths [illegible]ouble
12 " [illegible]ingle
20 " [illegible]
20 " [illegible]ouble
12 Tulips, nam[illegible]
12 " " [illegible]
24 " mixe[illegible]
24 " " [illegible]
6 " varie[illegible]ge, assorted
4 " new, [illegible]rted
6 Narcissus [illegible]amed
6 " sing[illegible]
6 " Tru[illegible]ties
6 " dou[illegible]
100 Crocus, named
150 " mixed
3 Amaryllis, assorted
2 Allium Azureum
2 Anemone Fulgens Duplex
25 " double, mixed
25 " single
6 Babianas, mixed
4 Bulbocodium Vernum
2 Crown Imperials, assorted
6 Eranthis Hyemalis
4 Freesias, Refracta Alba
6 Ixias, mixed
6 Iris, assorted
12 Jonquils, double
12 " single
25 Oxalis, mixed
36 Ranunculus, double, mixed
6 Scillas, assorted
12 Snowdrops, double
12 " single
6 Sparaxis, mixed
3 Cyclamen Persicum
4 Glory of the Snow (Chinodoxa)
2 Lilium Auratum
1 " Harrisi
1 " Lancifolium Roseum
1 " Tigrinum fl. pl.

With this la[illegible]tion, we will send without charge, purchaser's choice of any one of Peter Henderson's books, either

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It is an efficient insecticide for use in Green Houses, Conservatories and WINDOW GARDENS.

Guaranteed to Destroy POTATO BUGS, CABBAGE WORMS, CURRANT WORMS and ALL INSECTS destructive to vegetation in Garden, Field or Greenhouse. It is Safe, Cheap and Effective.

Sold by Seedsmen and Merchants in the United States and Canada, to the consumer at factory prices. Put up in canisters in 5 and 10 pound packages, and by the barrel in bulk, weighing from 225 to 265 lbs., net. For pamphlet of information address

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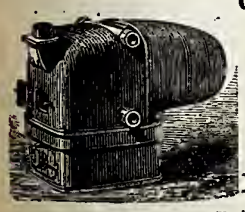

Corrugated Fire-box Boiler, for large Green-houses.

Base-Burning Water Heater, for small Conservatories.

Send 4 cents postage for Illustrated Catalogue and Price List.

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Surpasses all others in

Vigor, Hardiness, Large Size and Enormous Productiveness.

Will produce more value in fruit on the same area, than any other variety known. To be disseminated the coming Fall.

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12 CATTLEYAS,	12	kinds	good	plants	for	$12.00
12 LÆLIAS,	6	"	"	"	"	9.00
12 ONCIDIUMS,	12	"	"	"	"	9.00
12 DENDROBIUMS,	12	"	"	"	"	9.00

We have lately added to our collection **4,000 Established Orchids**, and from **3,000** to **5,000 Not Established.** These fine plants are as cheap as good Roses; write to us, stating what you want, and what size of plant, and we promise to answer you by return mail. We grow to sell and only ask a trial. Our latest acquisition is

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From the great exhibit at the New Orleans exposition, comprising over **7,000**, among which are fine masses of *Lycaste, Skinnerii, Odontoglossum grade, O. pulchellum, majus, etc.*

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Hyacinths,	Lilies,
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Crocuses,	Snowdrops,
Narcissus,	Roman Hyacinths.

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Special attention paid to Fruits. Stencils furnished.

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The most desirable of all Raspberries. In quality rivalling the famous Brinckle's Orange; very large and the most charming translucent yellow imaginable; canes fully equalling the strong growth of Cuthbert, even hardier and more productive. Send for full particulars, mailed Free. All kinds of **FRUIT TREES and PLANTS** of best quality, at fair prices. **Lawson's Comet Pear, Japan Plums, Meech's Quince, Parry Strawberry, Early Harvest Blackberry, Marlboro Raspberry, Empire State Grape,** and all other leading novelties in large supply. *The Largest Stock of Raspberry Plants in America. The Largest Stock of Blackberry Plants in the World;* a complete assortment of Nut-Bearing Trees. LOVETT'S GUIDE TO FRUIT CULTURE, is a profusely illustrated book of 70 pages, faithfully describing all valuable varieties of Hardy Fruits, with a rich fund of information on culture and management. Price, with colored plates, 10 cts., without plates, 5 cents. Price lists of Trees and Plants, FREE. **J. T. LOVETT, Little Silver, New Jersey.**

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Large importations direct from the leading growers in Holland, First quality Bulbs. Catalogues on application. **John Saul, Washington, D. C.**

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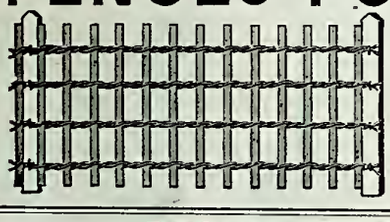

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I import my own bulbs, &c., and can sell to all at wholesale prices, the finest the market affords. SEE PRICES.

Hyacinths,	- -	50 cents per dozen.
Tulips,	- -	25 " " "
Narcissus,	- -	35 " " "
Crocuses,	- -	5 " " "

WRITE FOR FALL CATALOGUE.

E. HIPPARD, Florist,

Youngstown, Ohio.

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DESTRUCTION TO INSECTS.

The Rose Tobacco Insective Soap

Is sure Destruction to every species of Insects on Flowers, Plants, Shrubbery, Trees, and Animals. **It is made of the Gum of the richest Virginia and Kentucky Leaf Tobacco,** will not injure the softest growth but acts as an excellent fertilizer.

Sample packages sufficient for three (3) gallons of water sent by mail on receipt of 20 cents.

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Seed Wheat.

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Dealers supplied by the Car-load.

This wheat endures the winter the best of any, and gives the largest yields. It is a cross between the two most valuable kinds of wheat ever sown in this country.

Send in orders early. Send for our 70-page Fruit Guide and Catalogue, beautifully illustrated. Also send for free sample copy of Green's Fruit Grower.

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THE BOARDMAN TREE PAINT,

Prevents Apple and Peach Borers, destroys Bark Lice and Orange Tree Scale, stops Mice and Rabbits from Girdling Trees. Also a remedy for Pear Blight, Sun Scald, Frost Cracks, Black Knot, etc. Sold by

ROBERT C. REEVES,

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The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

Vol. VI. (Old Series, Vol. XIII.) SEPTEMBER, 1885. No. 9.

THE LIFE OF A SUMMER NIGHT.

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The American Garden.

Fruit growers will find in THE AMERICAN GARDEN through the year a great amount of valuable information on their specialty. We intend that no other journal shall excel us in the real value of its reading matter for fruit growers.

Market gardeners, and all farmers who grow vegetables for market, will find in THE AMERICAN GARDEN probably more valuable information on new and old varieties of vegetables, and their culture and marketing, than is contained in other journals in America. We consider the vegetable garden as important a part of horticulture as fruits or flowers.

Seedsmen, Seed growers, Nurserymen and Florists will find THE AMERICAN GARDEN one of the best journals in the world to keep them posted on events of importance in their business. We shall chronicle the advent of new varieties of fruits, vegetables, flowering and ornamental plants. We shall carefully investigate the merits of new sorts under all conditions, in all sections, and publish the records conscientiously, without fear or favor. We publish extensive reports of all important horticultural meetings and exhibitions. We aim to keep our readers informed of all progress in horticulture.

Skilled horticulturists everywhere are earnestly solicited to send us brief accounts of any interesting facts in their experience. Our corps of contributors is now large, but we want all the notes we can get from our readers in every State and country, on new varieties, the standing of old sorts, trials of new methods of practice, any changes of the condition of horticulture, etc., etc. We want THE AMERICAN GARDEN to be a faithful record of the condition of horticulture.

The special attention of our readers is invited to the offers of rare and valuable books on gardening, etc., and of a few choice periodicals and implements in connection with subscriptions to THE AMERICAN GARDEN.

Much of our space is taken up this month with Mr. Pierce's elaborate and interesting report of the first annual meeting of the Society of American Florists at Cincinnati. But the value of the material needs no excuse from us for occupying the room it requires.

An attractive feature in the development of a love for gardening among the people is the encouragement by the corporations of the culture of flowers by the workmen and officials about railroad stations. In some cases prizes are offered for the best kept grounds. This movement is particularly noticeable along the Pennsylvania, the N. Y. Central and the Boston & Albany roads, and perhaps others which we have not seen. Where once was bare ground and perhaps unsightly piles of ashes and rubbish, now are neat driveways, smooth lawns, and pretty flower-beds. The practice of some of the roads in grading and grassing the embankments is a concession to good taste which must be welcome to all travellers.

GARDEN VIEWS.

A photograph of a charming landscape, just received from a friend, suggests the idea that others of our readers may have photographs or drawings of picturesque views, beautiful groups, and interesting or rare flowers and plants. Many of these, no doubt, would be of interest to a wider circle, and we should consider it a great favor to receive copies of such original photographs or drawings as may be suitable for engraving and publishing in THE AMERICAN GARDEN. Much good may be accomplished thus, and we shall cheerfully give full acknowledgement for all favors thus received.

A POINT OF GRAMMAR.

Excepting the always open question of the Potato Scab, there seems to be nothing so embarrassing to some persons as to find the correct plural of some names of plants. While they have no hesitation in using apparatuses, prospectuses, etc., for the plural of apparatus, prospectus, etc., when it comes to the plural of Gladiolus, Narcissus, Cactus, etc., what shall it be?

Many botanical names although originally of Latin or Greek derivation, are to-day as completely adopted into the English language as are thousands of other foreign words, and when once so recognized there is not the slightest reason why they should not be subject to the rules of English grammar. Gladiolus is not any more Latin than Geranium, Calla, Fuchsia, etc., and if the plurals of the latter are Geraniums, Callas, Fuchsias, and not Gerania, Callae, Fuchsiae, then surely the plural of Gladiolus is Gladioluses and not Gladioli. Gladioluses, Narcissuses, Cactuses, etc., may sound a little less euphonious than Gladioli, Narcissi, Cacti, etc., yet this can be no excuse for violating the English language. Custom has in some measure sanctioned the use of the singular form for the plural also, for the sake of euphony, so that it is admissible to say: "a bed of Gladiolus, Cactus, etc.," but to apply foreign endings to English words is neither correct English nor good taste.

WOMEN IN HORTICULTURE.

We have no patience with the superficial observers who twaddle about the degrading effect of out-door work upon women. They must be peculiar women who can be more "degraded" by working in God's pure air, amid the beautiful sights and sounds of nature, among the wonderful plants of garden and field, than by being cooped up in a hot kitchen, handling pots and kettles, doing chamber work and mending old clothes. No honest work is degrading to any man or woman, unless it injures the moral nature or weakens the body. We owe to our husbands and wives and children and our Maker the duty of performing the work before us to the best of our ability. We also owe to them the duty of doing the work we are best fitted for, and to take good care of our bodies in order that we *may* do our work well.

No industrial pursuit is better fitted for women, and they to it, than horticulture, the culture of fruits, flowers and vegetables, for pleasure or profit. Already millions of women cultivate and love as pets the few flowering plants and vines in their windows; thousands know the pleasure of flower beds; and hundreds are practicing the art of gardening on a larger scale as a profession. May their efforts succeed, and may thousands more join their number! Thus will horticulture be honored, their own lives be made more beautiful and useful and mankind be blessed by the better health and higher aims of the mothers of Christendom.

TO OUR FRIENDS.

It may interest our friends and the friends of horticulture to learn that THE AMERICAN GARDEN is meeting with real success as an independent journal of horticulture. When we assumed the management last November many people predicted failure. But their predictions were as harmless as their endorsement is unsolicited.

THE AMERICAN GARDEN was a power in itself, and only needed well-directed hard work to push it to the success it has so far achieved, because there was a legion of intelligent horticulturists who stood ready to recognize honest endeavor in a field where workers are wanted.

Now we desire to join with ours the efforts of at least 20,000 intelligent, progressive horticulturists for the upbuilding of the most useful journal that can be made. We can't do it alone. We must have *your* co-operation if THE AMERICAN GARDEN is to be made as good and useful as it should and may be under proper encouragement. Will YOU coöperate?

THE FRUIT COMMITTEE

FOR THE AWARD OF THE AMERICAN GARDEN'S TEN $100 PRIZES.

For particulars about the prize offers see the October issue.

We have the pleasure of announcing the following gentlemen as the Committee which will award THE AMERICAN GARDEN prizes for fruits. We believe that all are members of the American Pomological Society:

(1) J. L. Budd, Ames, Ia., professor of horticulture in the Iowa Agricultural College; head of the system of 400 experiment stations in the Northwest for testing new fruits.

(2) Chas. W. Garfield, Grand Rapids, Mich., Sec'y Mich. Hort. Society, and a skilled pomologist.

(3) P. T. Quinn, Newark, N. J., Sec'y N. J. State Board of Agriculture, the well-known writer and horticulturist.

(4) Wm. Saunders, London, Ont., known the world over as a promoter of horticulture, a close observer, a careful experimenter. He has a large collection of small fruits.

(5) E. Williams, Montclair, N. J., a successful, practical horticulturist, and Sec'y N. J. Hort. Society.

All of these gentlemen are well known as careful, conscientious judges of fruits, and will no doubt satisfy the most critical as being above favoritism. All have collections of the newer varieties of small fruits, and are admirably situated for a fair and unbiased decision on the points at issue.

The committees for the award of the Flower and Vegetable prizes will be appointed by the Society of American Florists, and by the American Horticultural Society.

COUNTRY PICTURES.

In a Boston book store the other day we discovered a rare treasure for lovers of the beautiful in country life. It was a book of nearly fifty large, full page sketches of rare beauty and truthfulness, entitled "Our Year's Sketch Book." The artist, Irene S. Jerome, has reproduced here some of the finest of wood-scenes, fairylike landscapes, and the natural beauty of birds and flowers in the freedom of woods and fields. We looked the beautiful book through, once, twice, thrice, and it grew more and more entrancing with each glance. Of course we secured a copy for the little woman at home and made arrangements so that the friends of THE AMERICAN GARDEN can secure at moderate terms, as will be seen by reference to page 222, and on page 217 is a sample picture from the book, though not nearly so fine as in the book itself, which is printed on heavy paper, and is elegant in every way.

CORRECTION.

The Minnesota Apple which I recommend, *Giant Swaar*, is misprinted in THE GARDEN "Swan." There should also have been a comma between St. Peter's and Prolific Sweeting. They are two very different Apples. DR. T. H. HOSKINS.

METROPOLITAN MARKETS.

IN BRIEF PARAGRAPHS FOR THOSE COMMERCIALLY INCLINED.

A review of the month previous to August 20th.

FRUITS.

Peaches.—Californias have been preferred in quality until after August 15. They were Crawfords and arrived in 20-lb. packages; $3.00 to $4.50 wholesale. Mixons and Crawfords from North Carolina came in ½ bushels; 75 cts. to $1.00. Delawares are now excellent. They are Crawfords and Rareripes, the former $1.00 to $2.00 wholesale, or from $1.25 to $2.25 retail. If "selected," as sold in Broadway fruit stores, Rareripes bring $2.50 a basket and "Crawfords" $3.50 and $4.00 retail.

Pears.—Long Island Bartletts arrived green, for cooking; 30 cts. ½ peck, retail. Virginia Bartletts are $4.00 a box, wholesale. California Bartletts, large and handsome, cost 75 cts. to $1.50 doz., retail; early in August, $5.00 to $5.50 a box, 40 lbs., wholesale. Seckels on their first arrival from California, Aug. 15, brought the same as Bartletts; now $4.00 a box, wholesale, and 50 cts. doz, retail.

Plums.—From California hold their first place. Egg Plums, large, sound, and highly flavored, are 50 cts. doz., retail. Columbias, a darker purple, not as large or firm, are 35 cts. doz., retail. Gross Plums, 30 cts. doz. Wholesale price of Plums is from $2.50 to $3.00 a package of 20 lbs.

Limes.—Jamaica Limes are plentiful, and in brisk demand, Lemons being somewhat scarce. A crate of 200 costs $1.00 to $1.25, wholesale; 25 to 20 cts. doz., retail.

Lemons.—Boxes of 300 to 360 sell at $6.50 to $8.00, wholesale, for best quality.

Oranges.—Messinas and Palermos are the kinds in market. Half boxes of 100 cost $2.00, wholesale; 40 cts. doz., retail.

Cocoanuts.—$4.00 to $4.50 a sack of 100, wholesale; 10 cts. each, retail.

Pineapples.—Havana are the only sort now in market, at $2.00 to $2.50 a doz., wholesale; retail 30 cts. each.

Grapes.—Hot-house Grapes, both Hamburgs and Muscats, have sold at $1.50 to $2.50 lb. for the past month. California Muscats appeared August 1 at $5.00 per case of 40 lbs., wholesale; 5-lb. boxes now bring $1.25, retail. Delaware Grapes are 40 cts. a 2-lb. box, retail; Concords, 40 cts. 3-lb. box. Niagara Grapes are 25 cts. lb., retail.

Apples.—The varieties retailed are Astrachan and Sweet Bough, at 30 to 40 cts. doz., selected for table. Cooking Apples are poor enough to be windfalls: 15 cts. a ½ peck.

FLOWERS.

The wholesale flower market is extremely dull, owing to the absence of the largest patrons from the city, and the slackening of the watering-place demand. Roses from the greenhouses are improving somewhat. Perles des Jardins hold their petals more firmly and Sunsets are somewhat more lively in color. The Wm. Francis Bennett Rose bids fair to fulfill all that has been promised for it; it will be no more expensive than La France, which it resembles in fragrance. La France are unusually fine for the season; they and Bennett cost $8.00 per 100. Perles des Jardins and Sunset Roses are bringing $2.00 for the general run and $4.00 per hundred for selected. Bon Silene, Safrance and Douglas buds are $2.00. Mermets are very scarce at $4.00. Cornelia Cook's cost $5.00. Hybrid Roses are too scarce to quote. General Jacqueminots of inferior quality struggle in occasionally and sell for $4.00 per 100. Retail prices of flowers are so unsettled that they cannot be accurately quoted before next month. The shops are poorly stocked with anything but Roses.

After Rose-growing the energies of plantsmen are all turned towards the fall crop of Chrysanthemums. There is a craze for the cultivation of this beautiful and useful flower. Several amateur growers will compete powerfully this autumn at the shows, and probably they will excel any exhibition heretofore held. The new seedling Chrysanthemum plants will undoubtedly be held at a high price.

VEGETABLES.

Potatoes.—New potatoes have steadily declined in price and improved in quality since reaching mature size. Early Rose and Beauty of Hebron take the lead in quality, Burbank's, first last season, are now third-rate. Long Islands are $1.25 to $2.00 a bbl., wholesale, and $1.50 to $2.00 retail. Southerns have disappeared from market.

New Sweet Potatoes from South Carolina are of good size and quality. Early in the month they sold for 60 cts. a ½ peck: now 40 cts., at wholesale 25 per cent less.

Celery.—Early in August from Kalamazoo, Mich., came Celery, which brought 60 cts. a bunch, now retail 50 cts.: the next week New Jersey sent some of finer flavor, more tender and less stringy at 25 cts., and holds there. In bunches half the size of the Western.

Egg Plant.—A novelty appeared: white in color; small and 10 cts. each retail, 7 cts. wholesale. Purple are abundant: the largest 10 cts. retail; the smallest 5 cts.: at wholesale 2 cts. less. Early in the month they retailed at 10 cts. to 25 cts., wholesale 6 and 15 cts.

Green Peas.—In excellent demand and are still in market at 60 cts. a peck retail. Champion leads, Marrowfats are losing in favor.

Lima Beans.—Plentiful and excellent at 35 cts. qt. at first, early in August: now 20 cts. ½ peck.

Tomatoes.—New Jersey and Long Island, 15 cts. qt. early in the month retail; now 5 cts., and of prime quality.

Melons.—Hackensack appeared Aug. 16, are 15 to 25 cts. each, retail; 8 to 15 cts., wholesale. New Jersey Watermelons are 25 to 35 cts., retail; 15 to 25 cts., wholesale. Georgia Watermelons still arrive in large quantities: 25 to 40 cts. each. Banana Melons bring 50 cts. each, retail.

String and Butter Beans retail at 15 cts.

Cabbages.—Plenty from Long Island: prices at retail Aug. 1, 10 and 15 cts. a head; now 5 and 10 cts.

Cauliflowers.—No fair ones in market, and none expected of fair quality before Oct. 15. They sold at 30 to 45 cts. each at retail, Aug. 1; now 10 and 15 cts. a head.

Beets and Carrots, retail for 2 cts. a bunch.

Squash.—New Marrow are just in market at 15 cts. each, retail; Summer Squash 5 cts. retail.

Turnips.—Russian and White early in the month 15 cts. qt. retail: now 15 cts. ½ peck.

Mushrooms.—Hot-house Mushrooms ceased coming to market the first week in August. They grew scarce rapidly, rising from 75 cts. to $1.50 lb. Field Mushrooms appeared the 18th, at 35 cts. lb. retail; now 25 cts. qt. and not plentiful.

Onions.—Long Island red and white brought 10 cts. qt.; now 5 cts. retail.

Green Peppers and Cucumbers are both one cent each, retail.

Green Corn.—Is large and sweet. The "Mammoth Sweet" brings 15 cts. doz. retail. Field Corn is 10 cts. doz. The first from Burlington and Hackensack, N. J., brought 30 cts. doz., then 25 cts. retail; Field Corn 15 cts.

Spinach.—Out of market the first week in August, has appeared again; 15 cts. ½ peck, retail.

NOVELTIES.

Under this heading we propose to notice all new varieties of Fruits, Vegetables, Flowers, and ornamental shrubs and trees introduced by reliable houses here and abroad. We wish to have it distinctly understood, however, that the fact of a novelty being mentioned here does not imply our endorsement or recommendation of the same. This column is intended merely to serve as a record of the novelties of the day.

VEGETABLES.

Pea.—"Wordsley Wonder," Webb & Sons, Wordsley, England. A scimitar-shaped kind of first quality, is highly spoken of.

Peas.—"Evolution" and "Walton Hero" are named as the best of Laxton's latest seedlings.

Potato.—"Joseph Rigault," M. Rigault, Grosiay, France. In the report of the French National Horticultural Society it is spoken of as rivaling the best English and American kinds.

FRUITS.

Strawberry.—"Jewell," P. M. Augur & Son, Middlefield, Conn. "Parker Earl," J. T. Lovett, Little Silver, N. J.; "Bubach's No. 5," J. G. Bubach, Princeton, Ill. These three varieties are competing for THE AMERICAN GARDEN Premium. Each one has valuable qualities, and the judges will have no easy task in finding out *the* best.

Strawberry.—"Daisy Miller," Samuel Miller, Mo. The past season's experience did not show this variety to possess sufficient value to justify its introduction.

Strawberry.—"Lower." Originated at Mt. Pleasant, Mich. Of good size and quality, productive. Said to be excellent for home use, but too soft for market.

Raspberry.—"Golden Queen," Ezra Stokes, Berlin, N. J. Probably a seedling, or sport of Cuthbert; it is claimed to be the best hardy yellow Raspberry.

Grape.—"Lutie." Rosebank Nurseries, Nashville, Tenn. Claimed to be "the best Grape in America;" large berry, color and flavor similar to Delaware, hardy.

Peach.—"Burke." Originated in Louisiana, and named after Maj. E. A. Burke, director of the World's Exposition.

Plum.—"Krob." P. A. Krob, Anna, Ill. Supposed to have been introduced from Germany; is considered curculio proof, and especially suited for the Northwest.

Apple.—"Josephine," Isaac S. Kinball, Washtenaw Co., Mich. Said to be a cross between Tallmann Sweet and Greening, a very desirable late Sweet Apple, resembling Newtown Pippin and Greening.

Apple.—"Elise Rathke." A. Rathke & Son, Praust, Germany. The tree is of a peculiar weeping habit, valued not only for its ornamental appearance but also for the excellence of its fruit.

FLOWERS.

Geranium.—"Golden Dawn." Hallock & Thorpe, Queens, N. Y. Raised by John Thorpe, president of the Society of American Florists. Flowers of a warm orange-yellow color, more decidedly yellow than any Geranium heretofore known.

Pink.—"Alexandre Regnier." M. Regnier, Fontenay—sous—Bois, France. Described as robust and very hardy, flowers sulphur yellow, numerously produced, borne on strong stems, and never burst.

Narcissus.—"Sir Watkins." James Dickson & Sons, Chester, England. F. W. Burbidge considers it "the finest of all the peerless Narcissuses."

Begonia.—"Prince Henry." Sutton & Son, Reading, England. A new hybrid variety, extremely interesting and pretty on account of its being a cross between a seedling of the tuberous *B. Darisi* and one of the Rex section. Was awarded a first-class certificate by the Royal Horticultural Society.

Begonia.—"Picotee." H. Cannell & Sons, Swanley, England. A double tuberous variety with cherry-red petals having a well defined edging of white. Flowers very large. Was awarded a first-class certificate.

Rhododendron incarnatum floribundum.—James Veitch & Sons, King's-Road, Chelsea, London, S. W. Remarkable for its free-flowering tendency, and its numerous clusters of delicate rose-pink flowers. Received a first-class certificate.

The Vegetable Garden.

SEASONABLE HINTS.

Selecting Potatoes for Seed.—The proper time for selecting seed Potatoes is when digging the crop. Every careful observer will have noticed that there is considerable difference in the yield of different hills of the same variety and under apparently exactly the same conditions. This individual or family prolificacy, so to say, seems to be inherent and capable of being perpetuated.

Recent experiments at the N. Y. Agricultural Station have shown that the smallest tubers from the most productive hills yield more crop than the largest tubers from the least productive hills, thus indicating very clearly that in order to increase the yield of Potatoes it is only necessary in digging to expose the hills separately, and then go through and select seed from those hills which show the most abundant crop.

Sweet Potatoes should be dug and stored before cold weather sets in. They are far more tender than common Potatoes, and a frost that would not affect the latter in the least, when in the ground, might ruin the first. If permitted to remain long in cold, wet soil after they are ripe their eating as well as keeping quality becomes greatly injured. They should always be well dried before housing, and stored in a dry, warm place. A Sweet Potato that has been exposed to frost is not worth carrying home.

Spinach is one of the most delicate vegetables, and coming at a season when there are very few other "greens" it is the more highly appreciated. Sown now in a cold-frame, it becomes fit for use during the winter months, and if in the open ground it will be ready with the earliest spring. It requires rich, deep soil, and in the Northern States some light winter protection. For filling some odd spaces in the kitchen garden at this season there is nothing more suitable than the Spinach.

Cold Frames should now be made ready. Cabbage, Cauliflower, Lettuce, etc., when desired to winter the plants, have to be sown about the middle of this month.

The raising and wintering of cold-frame plants is not held in as much favor as formerly. The process requires a good deal of labor and attention, and plants started early in spring in a hot-bed or plant house, and afterward pricked out like cold-frame plants, give, as a rule, as much satisfaction.

Celery, when earthed up too early, is liable to rot. It is therefore not advisable to hill up more than what is wanted for early use. In drawing the soil around the stalks care should be taken not to allow any earth to come into the heart of the plant.

Tomatoes are destroyed by the first frost. A few bushes may sometimes be saved by throwing sheets or matting over them when frosty nights threaten.

Melons in Georgia are quoted at twenty-five cents a dozen.

After trying every known method of raising Celery, the editor of the Rural New-Yorker gives the preference to shallow trenches—say six inches deep.

CORN SALAD.

The name of this plant is probably derived from the custom of sowing the seed in the fall among Wheat, which is generally called "Corn" in Europe. In the genial soil and climate there, it attains sufficient maturity for fall and early winter use, and the young grain affords ample protection to preserve the remaining plants through winter. Corn Salad, or Fetticus, under which name it is also known, is used as a substitute for Lettuce, and in places where there is a demand for it—as exists in most large towns and cities—it may be made a remunerative garden crop in a small way.

Sown in spring in moist land it seldom fails to grow and mature an abundant crop according to the richness of the soil, but as it runs to seed very rapidly in spring and there are so many other kinds of salad at that season that take its place the demand for it there is but small. Early fall sowing matures a crop for fall or early winter sales, and is therefore best in all respects. The vitality of the seed is very uncertain. Only the very best and fresh seed should be used; two-year-old seed is useless. In the dry soil and atmosphere of August and September, the seed comes up slowly, and must therefore be sowed thickly and then be trodden

CORN SALAD.

down with the foot to compact the soil and keep out the air. I have known some of the seeds to remain in the ground more than six weeks before germinating under unfavorable circumstances.

The early frosts of autumn which kill the weeds do not injure the Corn Salad, which when full grown in the fall is a very marketable crop. I market it in crates and baskets, the same as I use for Strawberries.

The price is $1.00 or $1.25 per doz. baskets. Its quality varies considerably according to the soil and care it receives. Properly grown on rich land and in full leaf it is a very paying crop, but has a certain limit to its sale.

In a light soil its staying qualities are fully equal to Spinach; and I have cut it from the open ground in the latitude of Boston as late as December. On the approach of severe winter weather, I have been able to cut and keep a few bushels over in a cold pit; keeping it sometimes a month in that way.

Some experiments, which I made, in sowing the seed broadcast together with Clover and grain have not proved very satisfactory, the plants having either been smothered, or injured by frost. Sowing in drills 15 inches apart and dropping the seeds about one inch apart in the rows is much to be preferred. After sowing, it requires hardly any care or culture, if soil and weather are favorable. It is generally grown as a second crop, and needs no preparation for market except careful washing.

W. H. Bull.

THE PEA.

NOTES ON VARIETIES.

One of the questions that we are most often called upon to answer by visitors to our large garden, is, Which is the earliest Pea? As to be earliest, means to be most popular, the candidates for this honor are naturally numerous and ardent. In seeking to mete out justice to all, I have found it necessary to answer a second question, perhaps still more difficult than the first; viz., what constitutes a variety? Perhaps some of these numerous names offered are counterfeits. After much reading, thinking, and querying, I have settled upon an answer to this latter question, not because it is a perfect one, but because it is the best that I can find. It is this: the plants of two different varieties must differ more in their characters, than do normal individuals of the same variety. Otherwise, they are synonyms, and cannot be admitted as distinct sorts.

Applying this principle to our early Peas, I find it makes sad havoc with the names. It is like throwing a bombshell into the midst of a company of soldiers. It cuts mercilessly. Let us see. If my definition is right, the following names are all synonyms: Philadelphia, Philadelphia Extra Early, Extra Early Philadelphia, Cleveland's First and Best, Cleveland's Rural New Yorker, Dexter, Thornburn's Extra Early Market, Landreth's Extra Early, Ferry's First and Best, Sibley's First and Best, Thorburn's First and Best, Henderson's First of All, Hancock, and I judge from one season's trial that Vick's Extra Early must be placed in the same rank.

No, my judgment is *not* superficial. I have spent hours among these Peas. I have viewed the rows side-wise and end-wise. I have noted the height of their stems, and the color of their foliage. I have measured their pods, their internodes, and their peduncles. I have examined their stipules, and leaflets and tendrils. I have counted and tasted their Peas. As to their earliness, sometimes one is ahead and sometimes another. I find no regularity in this respect. The extremes for the whole of them are no more than I have found in different plantings of the same variety. I repeat; either my definition is wrong, or else these names must go into the contest as one.

To do this Pea justice, it is at the present time as early, as prolific, and as good as any early Pea we have. I am not sure but it is the *best* very early Pea. It has two very powerful rivals in the "Earliest of All" and the "Express," two blue-seeded sorts. It is sufficiently tall to need bushing, has pale foliage and matures its crop in a remarkably short time. Very possibly this many-named sort has been obtained by long continued selection from the Daniel O'Rourke, which it much resembles, and through this, from the Early Kent, from the old Early Frame that our great-grandmothers grew.

Passing down the line, the American Wonder leads the van among the wrinkled Peas. We have here the combination of the very best quality with a very high degree of earliness, together with a plant so dwarf that it needs no bushing. I do not regard its extreme dwarfness as very much to its credit, as it requires much room and much seed to grow plants and Peas enough for

a family. Notwithstanding, its popularity at the present is unexcelled.

A little later come Horsford's Market Garden, and the Stratagem, two Peas that I suspect it will be difficult to surpass. There may be others of the medium season that are equal to these, but I have not found their superior. The former grows about two feet high, has a strong stem, and deep green foliage. The pods are usually recurved, very plump, rather short, but borne in great abundance. It is claimed that this Pea matures its crop very evenly, but with me it has not done so. The Stratagem is quite distinct, through its compact, waved, deep-green foliage, very strong stem and peduncles, and its very long, recurved pods. Both these varieties are wrinkled Peas.

For a very late family Pea, I have been pleased with McLean's Premier. It is a tall-growing variety, which to some is an objection. It has the advantages of being very prolific, and remaining long in season.

I think the edible-podded Peas need only to be better known to be more appreciated. They seem to be very little grown, and yet I think that when rightly used, they form a very agreeable change from the common varieties. Doubtless those who attempt to use them make the mistake of allowing the pods to become too large before gathering. These should be used younger than those of the common Pea. The Edible Podded Butter is

RED TOP STRAP LEAF TURNIP.

perhaps one of the best of this class. It is very distinct in having the sides of it very sweet, tender, fleshy pods nearly or quite an eighth of an inch in thickness. The plant grows about two and a half feet high, is rather early, matures its crop slowly, but is not very prolific. We received the seed of this variety from France, and I am not sure that it has been offered in this country. Another excellent dwarf early variety of this class is the Dwarf Gray Sugar, which is offered in several of the catalogues.

To those who are fond of the curious, the Large White Podded Sugar Pea will be quite interesting. The immense pods are often five inches long and an inch in width. They are twisted and contorted in a singular manner, and are sometimes inflated, as if blown up. Of course the Peas do not nearly fill them. The pods when at the edible stage are almost white. This Pea is probably more curious than useful, as it is by no means prolific, and I think it inferior in quality to many others. "ELM."

New York Agricultural Experiment Station.

A moderately fertile soil is most suitable for Tomatoes. A surplus of manure stimulates leaf growth to the detriment of fruit.

Ice water did not prove effectual in destroying the Cabbage worms at the N. Y. Experiment Station. Pyrethrum (Buhach) is still considered the most effectual remedy.

TURNIP CULTURE.

Turnips are generally divided into two classes, the English and Swedish or Ruta Baga, and the former are further classified as white or yellow-fleshed. The English Turnip is tender, light and juicy, of very rapid growth, reaching maturity in six or eight weeks, while the Ruta Baga is close-grained, solid, and requires pretty much the whole season for its full development.

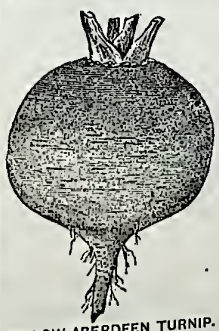
The Turnip is extensively grown as a field crop, but as a garden vegetable it fills a

EARLY FLAT DUTCH TURNIP.

place not occupied by anything else. In almost all gardens there are some vacant spaces left after the earliest crops are gathered, and I do not think that they can be planted with anything more profitable than Turnips.

To obtain tender and juicy Turnips it is essential that they should make a rapid growth, and to insure this it is necessary that the soil should be both rich and deep. It is customary with some to sow in the same rows that the previous crops have occupied. This is a very good plan if the ground has been well manured for the first crop, but generally it will be found preferable to give a good dressing of manure, ashes, or guano and to thoroughly incorporate with the soil. After the ground has been prepared and neatly leveled, the seed should be sown in rows, the rows being from one-and-a-half to two-and-a-half feet apart. If the cultivator is to be used the latter distance is preferable, for convenience' sake.

The sowing should always be done just before a rain if at all possible, as this insures a quick germination of the seed, a rapid



YELLOW ABERDEEN TURNIP.

WHITE EGG TURNIP.

growth, and a consequent escape from the Turnip fly, which proves so destructive during hot, dry weather. The plants will be safe from this insect as soon as they attain their rough leaves, but in the event of its appearance a slight dusting of lime, soot, or ashes will prevent its destroying the crop; the best plan, however, is to sow an abundance of seed, and if the plants stand too thick they can easily be thinned when hoeing. When the thinning is finished the plants should stand four inches apart, and in order to obtain a rapid growth the ground should be well worked and kept loose at all times.

To keep Turnips perfectly sound they should be taken up, in the vicinity of New York, about the 7th of November, or before severe frosts set in; cut off the tops to within half an inch of the bulb, place in a cool, dry cellar, and cover with sand. Thus protected they will keep fresh until February. Those for spring use may be preserved out-doors in a dry situation, care being taken to place them in a conical form. Cover them with an inch or two of straw and a foot or 18 inches of earth, and when opened in the spring they will be found perfectly fresh.

Some 25 or more varieties of English Turnips are enumerated in the catalogues of our seedsmen, the most desirable of which for general cultivation are the following:

Early Flat Dutch. This is a Turnip of medium size, pure white color, and of quick growth, but when overgrown, spongy and inferior. It is good only for early fall use.

Red Top Strap Leaf will form good-sized Turnips, when all is favorable, in about eight weeks from sowing. It is perfectly flat, with a small, tap root, and a bright purple top, fine-grained flesh and is a well-known and general favorite. The White Top Strap Leaf is a variety of this, differing only in its

GOLDEN BALL TURNIP.

being of a pure white color in skin and flesh.

Long White or *Cow Horn* is one of the best for general cultivation. It grows very quickly to a large size, in shape resembling a Carrot. It stands half out of the ground and has small tops; it is an excellent keeping sort if gathered before very severe frosts.

White Egg in appearance and quality is entitled to a high rank. It is a very desirable fall variety and is an excellent keeper for winter use. It is perfectly smooth, of a pure white color, and excellent flavor. It grows half out of the ground, and at times almost as large as a Ruta Baga. Decidedly one of the most desirable.

Robertson's Golden Ball is one of the best of the yellow-fleshed varieties for the general crop. It is very solid and keeps well.

Large Yellow Globe somewhat resembles the above, but grows to a much larger size.

Yellow Stone is of medium size, very firm and of good flavor. It is an excellent keeper and a very popular table sort.

Turnip seed can be sown at any time from the middle of July until the first of September, but I prefer to commence sowing about the first of August with the best keeping varieties, retaining such as the Early Flat Dutch until about the first of September, and as the great value of a Turnip consists in its rapid growth, I do not think that there is any advantage gained by sowing earlier.

CHAS. E. PARNELL.

The Fruit Garden.

SEASONABLE HINTS.

Keeping Apples.—A most important factor in the keeping qualities of Apples—and one that is frequently lost sight of—is the condition of the fruit at the time of picking. The more carefully fruit is handled the better it will keep; the slightest bruise or injury of any kind engenders decay.

The best time for picking Apples is just *before* they are fully ripe; full maturity lessens their keeping quality fifty per cent. An Apple that drops off the tree by a light touch is too ripe for long keeping.

It is one of Nature's immutable laws that fruit, so soon as it has become fully matured, shall decay. This process, although it may commence and progress very slowly, is sure to take place if the fruit is left to natural conditions, and every preserving method aims to furnish means which shall counteract or protract this natural tendency.

To accomplish this, expensive fruit houses and other devices have been invented, the experience with all of which goes to show that, other conditions being equal, a low temperature, ranging from 30° to 36° and never above 40°, is the primary and principal condition of success. Everything else is of comparatively little importance. In whichever way such a temperature can be provided most cheaply will generally be found most suitable.

Extreme dryness of storage was formerly considered of great importance, but later experience has proved the fallacy of this supposition. In fact, it has been found that, if the temperature is kept low enough, Apples will keep better in a damp than in a dry atmosphere. We know of several instances in which Apples placed completely under water have kept in good condition all winter, and but a few weeks ago we have eaten Apples that have stood under the drip of an ice house for nearly a year, and that were as fresh and sound as when picked off the tree last September.

Only when existing conditions do not admit the lowering of the temperature to the most desirable degree, becomes dry storage more advantageous.

SPECIAL FERTILIZERS FOR SMALL FRUITS.

In every normally matured plant are found certain mineral elements which, though comprising only a very small percentage of its entire mass, are still regarded as absolutely essential to perfect vegetable development. The relative proportion of these so-called ash constituents varies considerably in different classes of plants and even in individuals of the same class growing under different conditions. Just what the particular function of each element is, is not well understood, but there is little doubt that they have their special work to perform. Their invariable presence and varying proportions form the basis on which the scientific idea of special fertilization rests.

It was observed that changes in the proportions of the ash constituents were accompanied by corresponding changes in the organic compounds of the plant and consequently in its quality. This naturally suggested the query: How far is it possible to artificially control the proportions of the mineral elements, and in so doing to modify the quality of the plant or its desirable parts? In other words, To what extent is it possible and profitable to fertilize plants for special purposes? Until within a few years horticulturists have been slow to receive these ideas, though they have been successfully applied in general farming. The desirable qualities of Tobacco are known to increase with the increase of potash in its composition, and the best Sugar Beets are grown by special manuring with potash compounds.

To ascertain if similar conditions obtained in fruit culture, a series of experiments were begun about ten years ago at the Massachusetts Agricultural College by Prof. Goessmann. The plan included a study of the characteristic chemical features of our common fruits and the effect upon them of treatment of the plants with special fertilizers. The experiment began with the Grape. A wild specimen of *Vitis Labrusca* (our common wild Grape) was torn apart at its root: one-half was left in its natural condition, the other transplanted to cultivated ground and treated with nitrate of potash and bone superphosphate. At the end of three years fruit from the cultivated vine contained twelve per cent more potash and twenty per cent more sugar than that from the wild one. A cultivated variety, the Concord, although already in a highly developed condition, was placed under the same treatment and responded in a similar manner with increased quantities of potash, phosphoric acid and sugar.

Like experiments with Apples, Pears, Peaches, Plums, Cherries, Currants (see Bulletin No. 7, of Mass. Experiment Station), Raspberries and Blackberries have been completed or are now going on.

The study of the Strawberry, which may serve to point the moral of this article, was begun by an analysis of the fruit of a cultivated variety, the Wilder, grown without special attention or fertilization. It is given in comparison with an analysis of the fruit of the wild native species, *Fragaria vesca*, by Richardson. The cultivated fruit gave 0.41 to 0.63 of one per cent of ash: the wild, 0.41 of one per cent. This ash had the following composition:

	Wild fruit. F. vesca.	Cultivated fruit. Wilder.
Potassium oxide	22.06	49.24 per cent.
Sodium oxide	29.79	3.23
Calcium oxide	14.88	13.47
Magnesium oxide	trace	8.12
Ferric (iron) oxide	6.07	1.74
Phosphoric acid	14.47	18.50
Silicic acid	12.62	5.56

The striking difference in the composition of the two may be ascribed to the cultivation and selection undergone by the Wilder. The soda, lime and iron have decreased and the phosphoric acid increased, but most remarkable is the enormous increase of potash, which is more than doubled in quantity.

But the change was not confined to the mineral elements alone, for the same analysis showed that the proportion of sugar to acid in the wild species is as two to one, while in the cultivated varieties it is increased to six to one or more.

The next step was to ascertain how far the effect of ordinary cultivation could be improved upon by special treatment. Five plats of ground planted with the Charles Downing, received the following special fertilizers:

No. 1. Bone superphosphate and nitrate of potash.

No. 2. Nitrate of potash and kieserite (sulphate of magnesia).

No. 3. Bone superphosphate, nitrate of potash and kieserite.

No. 4. Not fertilized.

No. 5. Bone superphosphate, nitrate of potash and muriate of potash.

The ash of fruit grown upon these plats had the following composition:

	1	2	3	4	5
Potassium oxide	62.13	56.73	61.81	58.47	62.29
Calcium oxide	12.56	14.12	12.21	14.64	12.46
Magnesium oxide	5.96	3.29	6.00	6.12	6.33
Ferric oxide	2.32	5.77	3.64	3.37	2.50
Phosphoric acid	17.02	20.09	16.34	17.40	16.42

(In these results the soda and silica are omitted as of little importance and difficult to accurately determine. This makes the relative percentages of the remaining constituents somewhat higher, but their relation to each other remains unchanged.) The effect of the special fertilizers is easily traced: The potash shows a decided decrease in No. 4,—unfertilized, and is highest in No. 5, which received the largest application. The well known effect of magnesia in diffusing potash through the soil, and beyond the reach of surface feeders like the Strawberry is apparent in plot 2, by the decrease of potash in the fruit. Wherever the potash increases the lime decreases and vice versa.

The facts obtained with the Strawberry were brought out with equal or greater force in the other fruits mentioned. The results all point in the same direction. Preliminary analyses show that the chief mineral constituent of our fruits is potash — usually from forty to fifty per cent of the ash.

Application of potash compounds to the soil has in every case increased the percentage of potash in the fruits, attended by a corresponding decrease of the lime: the use of fertilizers rich in other ash constituents either singly or together, fails to produce a like increase in their percentage in the fruit. The inference is that the mineral element in which ordinary soils are chiefly deficient to the demands of so-called small fruits is available potash, especially since the natural proportion of this element in fruits is so unusually large. One step farther brings us to a practical application of this knowledge.

Potash fertilizers have decidedly improved the desirable qualities of fruits. Wherever the percentage of this element has been raised the change is accompanied by an increase of sugar and decrease of acid. This it is hardly necessary to say is an important and desirable change—a matter of dollars and cents. Other things being equal, the fruit with the largest per cent of sugar will bring the highest price. Moreover, less desirable varieties may be brought up to a higher standard, thus giving value to some good quality, as hardiness or prolific bearing.

The fact that the quality and character of garden and orchard products can be modified by the effect of special fertilizers is of immense importance in its practical as well as scientific bearing.

WINTHROP E. STONE,
Mass. Agricultural Experiment Station.

THE JEWELL STRAWBERRY.

For the past two seasons we have watched this new Strawberry with considerable interest, and the more we saw of it the more favorably did we become impressed with its valuable qualities. The Jewell is a seedling of either Jersey Queen, or Prince of Berries, raised in 1880 by P. M. Augur & Son, Middlefield, Conn. From the first year of its existence the plant showed unusual vigor and productiveness, which qualities it has so far retained sufficiently to justify its introduction for general trial and use.

The flowers are pistillate; berries large to very large, of good uniform size, mostly obtuse-conical, rarely irregular; very handsome and firm, color bright red changing to crimson when fully ripe; quality good and highly satisfactory to the taste of most people, and although not possessing a high degree of aroma, it is entirely free from the acidity so objectionable in our leading market berries; foliage large, vigorous, healthy, and free from blight; season medium to late, holding out remarkably well.

Its productiveness under good cultivation is simply enormous, while even under less careful treatment it will yield very large crops. From one-twenty-second part of an acre on the originator's grounds were picked during the season, 678 quarts, making a yield of 14,916 quarts, or 466 bushels per acre. As this does not include the many berries and bunches picked by visitors, the number of which was very great, it may be safe to assume that the entire product, if it could have been measured, would have been not less than *five hundred bushels per acre*. On many single plants we have counted over 100 berries, and we have seen a full quart of berries picked from a single plant at one picking. True, these wonderful results were obtained under most favorable conditions, exemplary cultivation, and by occasional irrigation, nevertheless on other parts of the farm, under less careful treatment, the yield was proportionately large. The same was the case in New Jersey where we have seen the plant under entirely different conditions, as well as on our own grounds in Westchester Co., N. Y.

Taking all points together we do not know of a recently introduced variety that has been so extensively tested, and made so many friends wherever known. Its only weak point—if such it may be called—is that it stands rather below the highest standard of quality, but in this regard it should be remembered that all varieties of Strawberries were deficient in flavor this year, and that the berries exhibited by the originator were grown under irrigation, which, as it is well known, deteriorates the quality of fruits. Berries from our own grounds, a rather stiff, clay loam, were of much better quality, improving as the season advanced. Compared with the Wilson, Crescent and other market varieties of this class, it is certainly a very great advance, and as a variety for home use it cannot but please far the largest majority of consumers.

Our illustration is an exact photographic representation of a bunch, reduced one-third of its natural size; the single berry shows a selected specimen of actual size.

THE JEWELL STRAWBERRY. FULL SIZE BERRY, AND BUNCH REDUCED ONE-THIRD.

ABOUT FIG TREES.

"Will Fig trees that are planted out in the garden bear better than those that are grown in boxes, and wintered in the cellar; how deep should they be planted; and in burying for winter should they be first covered with straw, or with earth only?"

Answer by Wm. Falconer.

Fig trees planted out bear better than those in boxes, and with far less trouble. You are more certain of a crop from young plants that are grown in tubs or boxes than you would be from the same sized or aged plants that are planted out, but the out-door plants can become large bushes, hence have more fig-bearing wood than box-grown ones. All the care the out-door Fig trees need is to bend them down and peg them flat to the ground, and bury them about a foot deep with earth in the fall, and uncarth them again in spring. My neighbor, Mr. Barlow, on Long Island, gets enormous crops off his Fig trees, treated in this way.

When planting Fig trees plant as you would any other bush or shrub; shake the earth from the roost and spread them out. There is nothing delicate about the rooting of a Fig tree. It roots easily. In burying for winter, use earth only. Straw or litter would be cosy winter quarters for field mice, and peeling the Fig trees capital amusement for the mischievous rodents.

SHORT CUTTINGS.

Peach Borers lay their eggs on the bark of Peach trees, near the base of the stem, during July and August. The young larvæ as soon as hatched work their way into the bark, and now, before they have had time to do much harm, they should be dug out and destroyed. By covering the cuts thus made, and mounding earth around the stem, the wounds will soon heal.

Black-cap Raspberries root from the tips of the new canes, and when it is desired to propagate them largely, the ends of the new shoots should be layered, that is, covered with some soil, not more than is sufficient to hold them down, although some tips will take root without this precaution.

The Flower Garden.

SEPTEMBER.

Sweet is the voice that calls
From babbling waterfalls
In meadows where the downy seeds are flying;
And soft the breezes blow,
And eddying come and go
In faded gardens where the Rose is dying.

Among the stubbled Corn
The blithe quail pipes at morn,
The merry partridge drums in hidden places,
And glittering insects gleam
Above the reedy stream,
Where busy spiders spin their filmy laces.

At eve, cool shadows fall
Across the garden wall,
And on the clustered Grapes to purple turning;
And pearly vapors lie
Along the eastern sky,
Where the broad harvest-moon is redly burning.

Ah! soon on field and hill
The wind shall whistle chill,
And patriarch swallows call their flocks together,
To fly from frost and snow,
And seek for lands where blow
The fairest blossoms of a balmier weather.

The cricket chirps all day,
"O fairest summer, stay!"
The squirrel eyes askance the Chestnuts browning:
The wild fowl fly afar
Above the foamy bar,
And hasten southward ere the skies are frowning.

Now comes a fragrant breeze
Through the dark Cedar trees,
And round about my temples fondly lingers,
In gentle playfulness,
Like to the soft caress
Bestowed in happier days by loving fingers.

Yet, though a sense of grief
Comes with the falling leaf,
And memory makes the summer doubly pleasant,
In all my autumn dreams
A future summer gleams,
Passing the fairest glories of the present!

GEORGE ARNOLD.

SEASONABLE HINTS.

The cooler nights of September remind us of the more or less severe frosts apt to occur in the latter part of the month, and to lay low the tender treasures of our flower-beds.

Geraniums, *Roses*, *Lantanas*, and all plants of the hardier class that are simply to be kept dormant during winter, need not be taken up for some weeks yet, but such as we wish to have in bloom in winter have to be potted without delay. Only young plants should be used for this purpose; those raised from cuttings this spring make the best winter-blooming plants. With older plants all straggling branches and old wood have to be cut off, and other shoots should be shortened in so as to induce a stocky, bushy growth.

At the approach of cold weather potted plants should be placed in a cold-frame, an old hot-bed, or on a sheltered piazza where they can be protected against early frosts and may be kept safe until severe cold sets in, when they have to be removed to the house.

Spring-flowering Bulbs may be planted now or at any time before the ground freezes, but whichever time is chosen the sooner the ground is brought in readiness the better. This should be done by making the soil as mellow, deep, and rich as possible.

Violets may be planted in frames at any time this month. Remove all runners, to throw strength into the crown, do not protect the plants in any way, and water copiously when needed.

ANEMONES AND RANUNCULUS.

The bulbous or Asiatic species of these beautiful plants are not reliably hardy in the Northern States, and must be kept secure from freezing. They need rich, moist soil, well drained though, and heavy mulching in winter, if grown in an open bed. A better way is to grow them in a cold-frame like Pansies, Daisies or Violets.

In summer after blooming, when the leaves have died off, the ground over the roots should be shaded with slats, brush, or a mulching of manure or litter, which is to be removed, however, when the plants begin to grow. Or, after blooming, the roots may be lifted and stored in sand during summer. Plants raised from seed in spring, blossom freely the following year.

HARDINESS OF LILIES.

One of the principal causes of failure in the cultivation of Lilies lies in over-estimating their hardiness, their power to endure the rigor of our winter, and failure wholly due to this is attributed to some unknown cause. Mr. C. L. Allen, who has made a specialty of Lily culture and who has devoted considerable study and careful observation to this subject, considers these mistaken ideas about the hardiness of Lilies as the greatest impediment to their more extended culture.

It is generally supposed, he said before the N. J. Horticultural Society, that all the various species of Lilies, with few exceptions, are "perfectly hardy," because they are natives of cold or temperate climates. A more erroneous opinion, or one fraught with so much danger to the plant, could not be entertained. The species that are truly hardy in this climate, other than those indigenous to the soil, are but few; indeed, they are the exception, not the rule. While it is true that some of the species are found in the coldest parts of the habitable globe, growing most luxuriantly, it is equally true those same species grown here are not hardy to that degree which renders it safe to plant them in our borders without protection.

There is no climate so severe on all bulbous-rooted plants, such as are usually considered hardy and left in the open border during the winter, as ours. This is particularly applicable to the coast, from Massachusetts to Virginia, where the thermometer often indicates 40° of frost when there is not a particle of snow on the ground for its protection. Here the frost penetrates the earth to a great depth one week, and is entirely out the next.

These constant changes from freezing to thawing cause the earth to contract and expand to such a degree as to frequently tear the bulbs in pieces. I have had whole fields destroyed in this manner. But let us be more specific. Take the beautiful little *Lilium tenuifolium*, a native of Siberia, and where it is largely grown as an article of food in its native habitat, it is perfectly hardy; here it is not. Why? Simply because in its Siberian home the first indication of winter is a snow-storm that covers the ground so deeply that frost rarely, if ever, penetrates it at all; while here the earth is frozen to a depth entirely unknown there notwithstanding their climate is much the colder of the two. The same is true of the *Lilium Martagon*, the bulbs of which are largely used by the Cossacks as an article of food; with them it is perfectly hardy; with us, in a much milder climate, it will rarely survive but a single season unless protected; and with that precaution, it grows with more vigor here than in its native home.

In Vermont, where the ground is nearly always covered with snow during the winter season, all kinds of Lilies grow to the greatest perfection. I have seen finer bulbs of the *L. auratum*, *Brownii*, *Chalcedonicum*, *Martagon*, and other species grown in that State, without the slightest artificial protection, than I have ever known produced in any other country. There the *L. auratum* is always healthy, and increases as rapidly as any of our native species.

There are many other plants protected by the snow in a similar manner. We notice on the Alps, at an elevation that permits of only four months of spring, summer and autumn, the *Primula Auricula* grows in the greatest luxuriance and profusion. It is there constantly covered with snow during their long periods of freezing weather. In the valleys below, where there is no snow and but light frost, the same plant will not live through the winter unless carefully protected.

It is not so much the cold that injures and destroys the bulbs, as the effect of the cold which disintegrates them by alternate freezing and thawing. I have often had bulbs of the *tigrinum*, *umbellatum* and *speciosum* remain on the surface during the winter without their being injured in the slightest degree, while those in the ground were completely destroyed.

The question may be asked, and it is a pertinent one, "Do not our native Lilies have the same elements to contend against as those not indigenous to our soil, and having them, escape uninjured?" Certainly, yes; but nature always protects her own, and in collecting our native species we see how wisely and beautifully it is done. The *superbum* is rarely found, excepting in woods or marshy grounds; the low-growing trees or shrubs form a complete net-work of roots above and beneath the bulbs, affording the most ample protection against the action of the frost, should it penetrate the heavy mulching of leaves that nature has provided for their protection. The *Canadense*, or common Lily of our meadows, forms its bulbs very deep, usually beyond the reach of frost, and has for a covering a heavy turf, than which there can be no better protection. This Lily, in our cultivated fields, is by no means hardy.

Whatever may be the cause of failure, I am certain from my experience and observation that, where Lilies are protected so that frost cannot reach them, they will invariably succeed and thrive in proportion as the other conditions of growth are more or less favorable; while those left unprotected, if in exposed situations, are quite as sure to die.

The protection of a bed of Lilies is a simple and inexpensive operation. The best and most natural mulching I have ever used is a covering, say six inches in depth, of newly fallen leaves; these kept in their places by a little brush, or pieces of board. Salt or marsh-hay is also an excellent protection; Corn-stalks answer a good purpose; or whatever material is most convenient.

TRITOMAS.

For the production of brilliantly striking floral effects in the autumn flower garden few plants are more desirable than the Tritomas or Flame Flowers. There are about half a dozen species, all natives of South Africa, but the most showy, and the one most frequently seen in cultivation, is *Tritoma Uvaria* and its beautiful improved variety the *grandiflora*.

The Uvarias are half-hardy, herbaceous plants, which, with a good mulching, live out doors through the winter, in the latitude of New York. They thrive best in a light, dry, deep soil, in a somewhat sheltered situation; and may be increased readily in spring, by the quite numerous suckers thrown out from the roots.

Planted in separate clumps in the lawn, or among shrubbery, their large, upright spikes of drooping, orange-red tubes are highly effective, and blooming during autumn, till early winter even, when there are but few flowers to cheer and brighten our gardens, they occupy a place undisputed by any competitor.

CANNAS.

If proper care has been given, Cannas are now in their glory, and when well grown there are few sub-tropical plants more suitable for the adornment of lawn or flower garden. The Cannas are natives chiefly of the West Indies and South America, although one or two species are found in South Carolina and Florida, while others come from China and the East Indies.

The fleshy corms or roots of some kinds are used as food in South America, and in the West Indies *C. edulis* yields the farinaceous substance—known as *tous les mois*, a kind of arrowroot, while the seeds of Indian Shot—*Canna Indica*, have been used as a substitute for coffee. On account of their beautifully veined and marked large leaves, and their picturesque habit of growth, they mass very advantageously with shrubs and dwarf sub-tropical plants.

In small gardens, however, Cannas will show to better advantage if planted in groups of three or five plants, or grown as single specimens in vases, with drooping plants around the edges. The hotter the season the better they will grow, and will throw up large spikes of flowers during the whole summer, and they will retain their beautiful foliage in spite of winds and storms, until it is cut down by the blackening frosts of the autumn.

Cannas should be planted in very rich garden soil, and may be set out as soon as danger of frosts is past. They will grow readily from seeds, and some of the handsomest varieties are thus obtained. The seeds are encased in a very hard shell which must be softened by soaking them in boiling hot water for at least ten hours. Pour the water over them from the tea-kettle, and set the cup containing them in a warm place, where it will keep quite hot until the seeds are softened; then plant them in a hot-bed, or in a box or pot of sandy soil, putting a pane of glass over it to retain the moisture. When the tiny sprouts appear, remove the glass so as not to make them wire-drawn.

A great many very beautiful varieties of Cannas are named in florists' catalogues. Among the latest kinds are *C. Ehemanni*, which has long, oval foliage like the Banana, with brilliant red flowers as large as those of the Gladiolus, while the flower-stalks are from five to six feet in height. *C. gladioliflora* has foliage of a deep, bluish-green, with flowers of a light-orange hue. *C. Adolph Netch* is a dwarf Canna with light-green leaves, and flowers of a deep crimson shaded to orange. *C. nigricans* is a very tall variety, growing eight feet in height, with dark-red leaves shaded to copper color, and dark-scarlet flowers. *C. Rendatleri* grows five feet tall, and has very large, orange-scarlet flowers, with long, purple, shaded leaves. *C. Depute Henon* has green leaves with a bluish tinge, and bright, orange-colored flowers.

A very handsome sub-tropical *parterre* can be arranged for a lawn or garden by planting the tall Cannas in the center and the dwarf varieties on the outside of the circle, with an edging of dwarf Asters or Nasturtiums. The roots should be dug up and placed in a box and covered with sand, after the foliage has been killed by frost, and they will winter safely in a frost-proof cellar; but some of them are so hardy that they will winter with only a protection of leaves in the gardens of the Middle and Southwestern States.

DAISY EYEBRIGHT.

TRITOMA UVARIA.

CARE OF CHRYSANTHEMUMS.

Chrysanthemums should now be watered liberally, and once or twice a week with weak manure-water. As the branches are very brittle they are much benefited by being tied up to stakes. The tips should not be pinched in any more at this season. If the plants are in the open border, and it is desired to bloom some of them in the house in pots, they should now be lifted and potted, shaded, and showered overhead for a few days, and then exposed to full light again; plunged in the ground, watered freely, and left out doors so long as there is no danger from frost, when they should be housed.

Rosa Lusiadas, which has recently been extensively advertised in Europe as something new and wonderful, and which was sold at $10 a plant, is, according to Jean Sisley, nothing but the old Noisette Céline Forestier, which has already been sent out under the alias of Liesis.

On a ranch in Stockton, Cal., 75 car-loads of Pyrethrum flowers are said to have been raised last season. They were worth $125,000 for manufacturing Buhach.

The Window Garden

AND GREENHOUSE.

THE WINDOW GARDEN FOR SEPTEMBER.

PREPARE FOR WINTER.

We should know what plants we have that are available for winter use, the space and means at our command for wintering and caring for them, and get both plants and place in readiness. We should not allow any of our winter plants to get frozen, nor enervated by cold or wet, at the same time we should avoid housing them too soon or otherwise treating them so as to induce a soft and tender growth. All plants are better outside than inside so long as the weather is favorable, and with a little extra care in the way of lifting them on the piazza at night, sheltered from cold, or at any time from wet or muggy weather, we may be able to keep Poinsettias outside till October, and Geraniums and Callas till possibly beginning of November.

POINSETTIAS

Are very sensitive to cold, especially to cold, wet storms. Under unfavorable circumstances they lose their lower leaves and assume altogether a sickly appearance. Bring them to the piazza, indoors, or any place that is warm and sheltered, but not shaded, for they love the sunlight, before cold weather or chilly nights come. Sprinkle them overhead in the afternoon, water freely but cautiously and encourage an unchecked growth from now till November if you would have large flower heads.

NASTURTIUMS.

Sow some seeds of *Tropæolum Lobbianum*, or you may obtain plants quicker still if you have old plants, by striking some cuttings; grow them on quickly and vigorously and they will afford you quantities of flowers in winter. For early use cut well back and pot some of the larger plants.

PELARGONIUMS.

Cut back the old plants, lift them and shake away the soil from their roots, and pot them in somewhat small pots. Plunge the pots outside and don't water much, if any, till new roots begin to come freely and the leaf-buds to become plump. Use the soft points of the prunings as cuttings; rooted now they will make nice, large blooming-plants next spring.

Scarlet Geraniums should before now be established in their pots. Those we may pot now will not bloom in early winter.

CHINESE PRIMROSES.

Keep cool, away from warm sunshine, repot as necessary and never allow them to get dry.

METEOR MARIGOLDS.

Pot a few small to medium-sized plants, plunge them in an open, sunny place; give them plenty of water and they will bloom nicely between November and New Year's.

BOUVARDIAS.

Cease pinching them. Towards the middle or end of the month lift and repot very carefully, stake each plant, moisten them freely at the root and overhead, and still keep them out-of-doors but in a warm, sheltered place and shaded from sunshine. Don't let them wilt if you can help it.

CALLAS.

As they begin to grow, pot them in well-drained, turfy soil. Keep them sheltered and slightly shaded for a little while, then remove them to a sunny place and give an abundance of water.

CARNATIONS

May be left undisturbed till next month, or, if you wish, you may lift and pot them now, and then plunge them in an open place and water them freely. Propagate cuttings now, winter them in a cold-frame, and plant out next spring, and they should yield a good summer crop of flowers.

CALCEOLARIAS AND CINERARIAS.

Keep cool, shade from warm sunshine, repot before the roots get pot-bound, never allow them to get too dry, and look after snails, crickets and green fly.

PARIS DAISIES, STEVIAS, ETC.

Shift into larger pots if necessary, using very rich, turfy soil, and give abundance of water and weak stimulants. A slight frost will hurt the Stevias but the Daisies are unhurt by three or four degrees frost and, as a rule, may safely stay out-of-doors till the end of October.

MIGNONETTE.

Sow either in pots or frames for winter use. Miles' Hybrid Spiral is about the best.

CYCLAMENS.

If not already done, shake out and repot the old corms and keep moderately inactive for a while. A good place for them is in company with Chinese Primroses. Young plants raised from seed sown last spring should be grown gently and without rest.

GLOXINIAS.

Those that bloomed in pots may be dried off gradually but otherwise not disturbed. Don't give any more water to those planted out in frames, and about the end of this or early next month lift the "roots" out of the frame and store them one layer deep in shallow boxes filled with earth to be kept dry over winter. The "roots" should never be subjected to a temperature under 50°.

BEGONIAS.

Do not let the Rex and other large-leaved varieties get too crowded or wet, else their leaves will rot; repot if necessary the young stock of *B. fuchsioides* and other winter-flowering kinds, give them plenty room and endeavor to secure stocky plants.

EVERGREEN SHRUBS.

Azaleas, Camellias, Oleanders, Bay Laurels, Myrtles, Orange trees, and the like, should be freely washed overhead by hose, syringe or other means so as to insure their immunity from red spiders, thrips and other insect pests. In the event of frost, spread newspapers, sheeting or other light material over them, or take them upon the piazza over night to save them from the frost. A few degrees of frost may not hurt the plants, but bear in mind it would not do them any good, therefore be on the safe side. A sharp frost will injure the flower-buds of Camellias and Azaleas.

CACTUSES.

These curious plants are now "fat" and vigorous, hence an easy prey to rot and rust. Opuntias and Cereuses require no solicitude except protection from frost; Mamillarias and other little delicate kinds should be gathered together where we may save them from being drenched by rain or wilted by cold dews.

FERNS.

Give them plenty of water and shade from sunshine. Keep them outside on the piazza or elsewhere so long as there is no danger of frost. Where the fronds become disfigured by a layer of the scattered "seed," wash it off with a sponge or syringe. If well rooted and in good, thrifty condition, you may repot some evergreen young stock, as the common Maiden-hair, and *Pteris serrulata*, *Onychium Japonicum*, *Aspidium falcatum* and *Nephrodium molle*, to encourage fresh young growths in winter. But old plants of any sort, and more especially of hardy and half-hardy Ferns, let alone, else you may start them prematurely and so weaken them.

OTHER "GREENS."

Repot or top-dress Smilax, give it extra watering and encourage it to grow. Have a few Rose Geraniums in pots to give you leaves in winter. Plant Club Moss and Tradescantias in the pots containing the other plants. And if you wish for green vines to run about and over your windows have some English Ivy, "German" Ivy, Madeira vine and Cobæa started in pots.

BEDDING PLANTS.

Make cuttings of Zonal Pelargoniums, Ageratums, Coleuses, Iresines, Alternantheras, Abutilons, Hibiscuses, German Ivy, Calceolarias, Lantanas, Heliotropes, get them well rooted before cold weather comes. Old plants require so much room that it will be found more convenient to keep over a stock of young ones than to preserve the old, and by having the young stock rooted early and well established in their pots, they are likely to winter well. Whatever old plants we may wish to keep may be lifted about the end of this month or early next month, cut well back and potted into small pots. I prefer to raise my Salvias, Centaureas and Vineas from seed in spring rather than keep over old or young stock in winter.

WM. FALCONER.

THE PETUNIA IN THE HOUSE.

Last fall, in cleaning up the beds, I came across some small seedling Petunias which looked so healthy and desirous of living a longer time than I knew the cold weather would allow them to, that I selected two or three, and planted them in six-inch pots. They took to their new quarters very readily, and began to bloom shortly after being brought into the house. To one I gave a trellis, another I put on a bracket, and allowed it to straggle about to suit itself, and the third one I kept pinched in well in order to make it as bushy and compact as possible.

All these plants have done exceedingly well, and I shall certainly make use of the Petunia as a plant for winter flowering after this. The plant on the trellis was large enough to fill one ordinary window, and it has been covered with blossoms all the time. The one grown on the bracket has afforded me much pleasure by its graceful habit of growth, and the profusion of its bright magenta flowers, while the one kept pinched in has done a good winter's work in helping to brighten up a stand of Pelargoniums from which no flowers were to be expected during the season. On the trellised plant we frequently counted over one hundred flowers at a time. All the care that was given the plants was to keep the soil moist, and to re-

move all blossoms as soon as they began to fade. If seed had been allowed to form, our crop of flowers would have been scanty.

Considering the little care required and the result in flowers, I have no hesitancy in saying that there is no more satisfactory plant for the house. Other plants which require more care may be more desirable, but the lover of flowers who has but little time to give them will find the Petunia just the thing to make the window gay, and surely everyone can have a Petunia.

E. E. REXFORD.

THE LITTLE GEM FEVERFEW.

The Feverfews of our gardens are among the most valuable plants in the formation of ribbon beds, especially the "Golden Feather" with its bright golden yellow foliage. When used for this purpose the flower-buds have to be scrupulously removed; grown in pots the Feverfews are held in high esteem for cut flowers, during autumn and winter.

The variety "Little Gem," shown in our illustration, is a specialty with Peter Henderson and is a great improvement over the old, straggling forms, for cut flowers. It is very dwarf, growing not over 12 to 18 inches in height, and produces larger and more perfect flowers of pure white.

THE GOLDEN GEM FEVERFEW.

ROSES FOR WINTER.

Notwithstanding that winter-forcing of Roses is, by all professional growers, considered over-done, new Rose houses are constantly being erected, and persons who had no previous experience are embarking in the business with the expectation of realizing large profits. Much as it is to be desired that the cultivation of flowers of all kinds should increase, we cannot advise anyone to invest much money in a business with which he is not thoroughly and practically familiar. In a recent number of the Germantown Telegraph a skillful practical Rose-grower gives his views and methods in so concise a manner that they are worthy the careful consideration of those intending to force Roses.

Many people think, he writes, all they have to do is to put up a greenhouse, stick the plants in the ground and they would go on all right and that there was a fortune in it. It is not done quite so easy as all that. Some authors have written whole books on this subject. But it will be impossible for me to write a long sermon here as space will not admit; so I will endeavor to give a few practical hints in as brief a manner as possible, and sum it all up in a nutshell.

To begin with propagation; strong, healthy cuttings should be put in any time from September to January, in good bar sand, over a temperature of 60° or 65°, with the temperature of the house 10° less. It will take from 20 to 25 days to root them.

They are then potted off in two-and-a-half inch pots in three parts good, rotten sod and one of sand, and then placed in a temperature of about 50° by night with 10° to 15° more in the day time. They should be regularly shifted into larger pots as they become filled with roots, or pot-bound. This is an important matter and should have prompt attention, as if they once get a check in their growth at this early stage it will take them a long while to recover.

Syringing is done once a day to keep down the red spider. Fumigate, by burning Tobacco stems twice a week, to keep down aphis or green fly. With this attention plants which were put in as cuttings at the season named above ought to be two feet high by July, with roots enough to fill a six-inch pot; if intended to be grown on continuously in pots a shift into an eight-inch pot will be required by the first of October to flower them in; if intended to be planted out on benches or solid beds of soil, this should be done about the middle of August.

Some people go to a good deal of trouble making prepared beds for them, but I consider this all unnecessary and labor in vain. I have seen quite as good Roses grown in a bed made of the natural soil, especially if the ground is rather stiff, which seems to suit them. The bed should be dug about 15 inches deep, with four or five inches of good, rotten cow dung turned in, and during their active season of growth they were mulched with three or four inches of the same material.

Roses, when grown under glass, are sometimes attacked with mildew. To prevent this the hot-water pipes should be painted with a mixture of sulphur and lime made of the consistency of whitewash; the lime is merely to make the sulphur stick. This will be required about every three weeks.

Watering is a matter of the first importance and requires some experience to know what is the proper condition. Whenever the soil shows indications of being dry on top, a thorough watering should be given—enough to completely saturate the soil, and then about every two weeks after, during the months of June and July, they should be allowed to dry off sufficiently to lose their leaves, and then pruned and started into growth gradually at first, for the next season.

To grow Roses successfully it is very necessary that the houses should be especially constructed for them; no halfway business will do. Houses should face the south, with the beds down the center, an 18-inch walk each side, with three-foot wide benches on each side, made to hold six or eight inches of soil.

Some people try to grow Roses in houses heated with flues; that turned out a failure long ago. Some try to grow them in houses with a mixture of green plants; this may do to a certain extent if the house is heated with hot water, but it will not be a success.

The favorite Tea Roses now grown for winter are Perle des Jardins (yellow); Niphetos (white); Catharine Mermet (rose); Bon Silene (carmine); Duke of Connaught (crimson), and the latest introduction from England, the William Francis Bennett, a crimson-scarlet hybrid Tea Rose.

NEW ZEALAND FLAX.

One of the most beautiful ornamental-leaved tropical plants of our hot-houses, and used on lawns, is the *Phormium tenax, var. variegata*, or New Zealand Flax; it is rarely known to bloom in cultivation. A specimen, however, in the collection of a gentleman owning fine grounds at Llewellyn Park, Orange, N. J., has during the summer thrown up a number of flower spikes to the height of ten feet. The blossoms are orange color, and shaped something like the Gladiolus, hundreds of them being borne on one plant.

FUNERAL DESIGNS.

During the time when Garden Lilies were at the height of their beauty, superb funeral designs were made of these and white Sweet Pea blossoms. A very handsome and novel piece called the "Broken Link," has been fashioned by a Broadway florist for a floral expression of sorrow. Three links of a chain, the center one being broken, are made, each of a different flower. These are placed on an easel of Lycopodium.

At the funeral of an infant, lately, the little casket, which was white, was surrounded by tall Daisy plants, the flowers of which rose in masses around the child, who seemed sleeping among them.

OUR WINDOW BOX.

Heliotropes should be established in pots before September.

Lift and pot Libonias and Seriographis, and otherwise treat like Bouvardias.

Don't wait till other folks have picked out and bought all the finest Hyacinths, Tulips, and Narcissuses before you get some. Pot some Dutch Bulbs now, and the remainder next month.

Lawn and Landscape.

THE ASH-LEAVED MAPLE.

Negundo aceroides.

On the 4th of July, 1876, I planted an Ash Maple or Box Elder tree near the porch at the southeast angle of my house. It was a Centennial tree; and it has proven worthy to be one. When planted it was a mere switch, four feet high, and without a branch. To-day it is 20 feet high and has a top that casts a dense, grateful shade over the porch. I know of no tree that I can recommend more highly for door-yard shade than the Box Elder.

It can be grown successfully from Canada south to Tennessee and North Carolina, or even farther south. It grows rapidly, yet solidly, and so far as I know is altogether free from disease, and no tree is infested less with worms, etc. It has a dense, spreading top; in fact, it has this fault—a tendency to make too much top, so that the limbs are frequently broken in storms, if the trunk is not broken. This, however, can easily be remedied by keeping the top well trimmed out. This must be attended to during the first ten years of the life of the tree, else it will be at least unshapely, if it is not altogether ruined. Keep the lower branches at least eight feet from the ground, for the top will become so large and spreading that there will not be a good circulation of air under it if the top is nearer the ground. By keeping the top trimmed out the breaking of limbs will be avoided, as the wood is not easily broken; it is only on account of the great resistance which the top offers to the wind, on account of its density, and not because the wood lacks strength, that the top receives so much damage from storms. The leaves are not so large as of some trees, but they are of good size, and effectually intercept the rays of the sun, making a cool shade.

The tree is not injured by tramping, as are many trees used for shade. My Centennial tree is tramped about a great deal, being just by the pump and the steps leading upon the porch; yet it has always grown thriftily, and to-day its trunk is almost a foot in diameter at the base. This amount of tramping would prove fatal to the Oaks, Hickories, etc. While undoubtedly the Box Elder does better in some soils than in others, it has done well wherever I have planted it. My farm is not all prairie land, but runs into broken timbered land along a creek which flows through one side. But this tree has grown well upon the gravelly, sandy land that borders upon the creek as well as in the black, mucky soil of the prairie.

The Box Elder is a handsome tree. The top is spreading, symmetrical and graceful. The foliage is dark green. The trunk is smooth and well proportioned. In point of beauty it is excelled by none of our forest trees. It is equally commended by its hardiness. It does well in lower Canada; and along the fortieth parallel, where I have experimented with it, it is never injured by the winter. Last winter was an unusually severe one in this locality, proving fatal to large numbers of my orchard and ornamental trees, and injuring or killing outright quite a number of the forest trees; but so far as I have been able to perceive, not one of my Box Elders has been injured in the least by the cold. Nor is it injured by heat or drought, and the thermometer hanging on the shady side of my Centennial tree marks 97°; yet the foliage on the tree is fresh and thrifty.

I have never had any Box Elder fail to grow after transplanting, but I have always transplanted small trees—those one year old. Nothing is gained by using older trees. The older the tree the greater the probability of its failing to grow; and ten years after transplanting, a tree one year old will be larger than one three years old when transplanted. This is true of all trees with which I have had experience. JOHN M. STAHL.

BEDS AND WALKS IN THE LAWN.

As a rule the lawn proper should not be cut up with flower-beds. Its broadest expanse appears to the best advantage when in a clean, velvety, unbroken turf. Crowding in flower-beds and shrubs at every possible point, destroys the main beauty of the lawn—in fact changes the space intended for a lawn into a shrubbery and flower-garden. Where the lawn is large, an occasional shrub kept neat and well-trimmed in harmony with the closely shaven turf, often adds much to its appearance, relieving the monotony of an extensive grass surface.

But to me a flower-bed out in the lawn proper, always seemed in bad taste. Shrubs and trees seem much more in place there. Trees and turf are naturally found together, the grass growing over the roots and about the stems of the trees; but bright, tropical flowers and variegated foliage of foreign origin are not natural there and can hardly be made to appear so. Such beds make dead blotches on the green surface of the lawn in early spring, and mar what would otherwise be a beautiful prospect. About the house, in the turnings of the walks and driveways, tastily arranged beds of suitable flowers are delightful. The flower-garden is an institution of itself as much as the vegetable-garden, and as a rule should be kept just as separate. It may form a beautiful feature of some part of the grounds, but should not be mingled with the lawn.

In laying out walks and driveways in a lawn beauty and utility must be jointly considered. A neat, well-made walk or driveway located to serve a useful purpose never mars a lawn, but rather makes the whole complete. However artistic a walk or driveway may be it detracts from the beauty of the lawn when placed where not needed. We often see superfluous walks laid out in this way, starting from no particular point and having no destination in view. After innumerable serpentine twistings and turnings, they usually come right back to where they started without having accomplished anything on the way more than to puzzle and annoy the traveler.

In the smallest grounds one often finds the greatest display of walks and driveways, the owners aiming to imitate the plans and arrangements of large parks that they have seen and admired elsewhere. The effect of such imitation is often ludicrous. For instance, where the house is only a few rods from the street, clumps of shrubbery are planted in the line of the driveway, necessitating a turn and detour round the obstruction. While where a clump of trees of centuries' growth obstructed the direct passageway in a large park, such a turn would appear graceful and natural, when one sits in a carriage and looks directly *over* the puny clump to the object of destination beyond the effect is simply ridiculous, showing, as it does, the transparent imitation.

Nor is it in good taste to take too roundabout a course in laying a walk or driveway from one point to another. Dead, straight lines are not generally agreeable or natural, but the line of a driveway need be neither circuitous nor straight. A road or walk may lead to its destination with a gentle curve that will be agreeable to the eye, and at the same time not lead one a round-about chase. W. D. BOYNTON.

TRANSPLANTING EVERGREENS.

Although the safest season for transplanting evergreens of all kinds is spring, before growth has started, well-grown nursery trees may be transplanted in August and beginning of September with perfect safety. With proper care, in fact, they may be transplanted at almost any time. A neighbor of ours who has a choice collection of evergreens, moves his trees from one place to another, as seems more desirable, with utter disregard of seasons and weather, and never loses a tree.

With coniferous trees, more than with any others, it is of the utmost importance that the small fibrous roots should be preserved as much as possible in transplanting, and never be allowed to become dry and shriveled up. After the trees have been carefully planted, the ground around them should receive a heavy mulch which is to remain during winter; and in the case of tender kinds, a winter protection of evergreen branches or something equally effective, loosely tied around the trees, is to be highly recommended.

HARDY RHODODENDRONS.

The definition of the term hardiness in plants is frequently wrought with difficulties and uncertainties, but it will be safe to assert that any plant that has survived the last exceptionally severe winter may be termed hardy. In the vicinity of New York many varieties of Rhododendron that have withstood the cold of more than one decade have succumbed this year. Especially notable among the varieties that have come out of the trial unscathed are: *R. grandiflorum*, *Everestianum*, *giganteum*, *album elegans*, *Lee's purple*, *roseum elegans*, *atrosanguineum*, *gloriosum* and *purpureum elegans*.

INFLUENCE OF LANDSCAPE.

The influence of landscape upon happiness is far greater than is generally believed, says Ph. G. Hamerton. There is a nostalgia, which is not exactly a longing for one's birthplace, but a weary dissatisfaction with the nature that lies around us, and a hopeless desire for the nature that we were born to enjoy.

FALL SEEDING.

When the ground is in good condition, early autumn is as favorable for sowing grass seed as any time. On poor, uncultivated land a perfect lawn cannot be established at any season, without previous preparation.

A PAGE FROM "ONE YEAR'S SKETCH BOOK," BY IRENE E. JEROME. SEE PAGES 217 AND 222 OF THIS ISSUE FOR DESCRIPTION.

Exhibitions & Societies.

AMERICAN INSTITUTE FARMERS' CLUB.

The meetings of this club will be resumed on Tuesday, Sept. 22d. They are now held at Clinton Hall (Astor Place & 8th Street, near Broadway) the 2d and 4th Tuesday of each month, at 1.30 P. M. The discussions and exhibitions are always full of interest, and all persons interested in agriculture or horticulture are invited to attend.

MASSACHUSETTS HORTICULTURAL SOCIETY.

A special list of prices for Spring Flowering Bulbs has been issued in advance of the regular Schedule of Prices, in order that those desiring to compete may be enabled to make timely preparation. The date of the Spring Exhibition will be about the 20th of March, 1886. The prizes are very liberal and the list comprises Hyacinths, Tulips, Polyanthus, Narcissus, Jonquils, Lilies, Lilies of the Valley, Anemones, etc. Special prizes for fifty named Hyacinths are offered by the "General Union of Holland," to be competed for by nurserymen, seedsmen and florists; competition open to all. Schedules may be obtained from the Secretary, Rob. Manning, Horticultural Hall, Boston, Mass.

A GRAND POMOLOGICAL CONVENTION.

From all indications it appears that the coming meeting of the American Pomological Society, in Grand Rapids, Michigan, on September 9th and continuing for three days, will be the most numerously attended and most interesting assemblage for the discussion of fruits and their culture ever held on this continent, if not in the world. Many choice collections of fruit will be on exhibition, especially from the Central and Southern States; and much care has been taken to select topics for discussion which are suitable for a society covering such a vast extent of country.

Among the speakers and essayists announced are many of our most prominent and experienced fruit culturists, and never before have so many distinguished pomologists come together as are expected to meet on this occasion. In a letter just received from the venerable President, Colonel Marshall P. Wilder, he writes that his health is so far restored that he feels strong enough to undertake the long journey, and that he expects to be present at the meetings. This will be joyful news to his many friends and admirers.

The salutary influence which the American Pomological Society has exerted on the development and improvement of our pomological and horticultural interests in general, during the thirty-five years of its existence, can hardly be over-estimated. No other country nor profession has an association so thoroughly organized and admirably conducted for the promotion of the public good. If the society achieved nothing else but the publication of its Fruit Catalogue, from which may be seen at a glance the value and adaptation of every variety of fruit in each State, it would have accomplished a work of inestimable value, and yet this is only a small part of its work. The importance and usefulness of the society in uniting and bringing together all the most experienced and progressive members of the profession, inducing the free interchange of opinion and experience, and promoting and establishing centralized action which shall at once command respect and authority, become evident to anyone who attends their meetings or who reads the society's reports.

The scope of the society being a national one, in the fullest sense of the word, unfettered by any trade interests whatever, it becomes the duty of every progressive American pomologist to add his share to the furtherance of its noble aims, and we cannot too earnestly urge those of our readers who can make it convenient to visit Grand Rapids at this time, to attend these meetings, and, if they choose to assist the common cause, to enroll their names upon the members' list. But whether members or not, all persons interested in fruit culture are welcome to take seats in the convention and take part in the discussions; and all kindred societies are invited to send delegates.

SOCIETY OF AMERICAN FLORISTS.

THE MEAT OF THE MEETING.

Special Correspondence of The American Garden.

This vigorous and full-grown daughter of the American Nurserymen's Association celebrated her first birthday by a grand meeting held in Cincinnati Aug. 12, 13, and 14. President John Thorpe said the florists' business has quadrupled every ten years and bids fair to reach enormous proportions. There are now in the United States 8000 florists, using over 3,200,000 feet or 630 acres of glass, an average of 400 square feet of glass to each florist. Allowing fifteen plants per square foot, would give nearly 50,000,000 plants as the annual product of these greenhouses. In four months of last winter more than 4,000,000 Roses were sent to New York alone. He estimated that there were at least 24,000,000 Roses produced in the winter of '84-'85. Twelve thousand acres were used last year for growing bulbs in this country and we imported the product of at least 6000 acres of European growth. The object of this society is to gain information, get acquainted with each other, discuss questions of mutual interest, and promote the floricultural education of the people.

The florist must be a person of a mechanical turn of mind, intelligent, observing, and above all, a reader of everything pertaining to his business. Catalogues have ceased to be mere price lists, many of them are valuable works of art, awakening interest in flowers in thousands of homes to which they find their way. The field of the society's work is almost unlimited. Thousands of gentleman's gardeners should be reached by this association, and tens of thousands of amateurs should be influenced for good by its deliberations.

DISEASES OF PLANTS AND THEIR REMEDIES Was the title of a paper by Charles Henderson of New York. Very few vigorous plants are troubled by insects. The Coleus in the greenhouse during winter is the prey of the mealy bug. Out doors, in conditions more congenial, the Coleus rapidly frees itself from the incubus. A lowering of vitality by the partial freezing of a Rose-house leads to mildew of such plants as the frost affected. Carnation disease is caused by working the plants at a high and unnatural temperature. Mr. H. propagates them very early in spring and pricks into boxes, and keeps them at a low temperature. Verbenas are weakened by allowing them to become pot-bound before planting out. He plants only the last strikings for stock plants, putting them in open ground before they need repotting; gives them good soil, cuts back close in August; surface manures, and propagates from the rank, new growth in October. The rust on Heliotropes and Bouvardia is the same thing, the result of weakened constitution. Celery rust is induced by injury to the roots.

The green fly he keeps at bay by the vapor of moistened Tobacco stems. A strip two feet wide and ten inches deep, laid under one of the benches the length of the house, kept moist and renewed once in six weeks, protects the plants perfectly. He used the new remedy, Fir tree oil, for mealy bug, dipping the plants into it.

The Rose-bug lava is a terrible pest. The white grubs, about a third of an inch long, prey upon the roots, doing great damage. The only remedy is to hand-pick the mature bugs.

Black ants work great injury by carrying up the soil and plastering it around mealy bugs and aphis. Pyrethrum and a bellows is the remedy.

For mildew and red spider he sprinkles the heating pipes with water and dusts on flower of sulphur. Black mildew he thinks is a result of impoverished soil, as it never appears when liberal manuring is practiced.

In the discussion which followed, Mr. Armstrong of St. Louis said that he coats the pipes with a mortar of lime and sulphur. Mr. Bonsall of Salem, O., thought the coating of linseed oil and sulphur was very offensive, and he hardly knew which was the most objectionable, the red spider or the bad smell. Mr. Reddymeyer keeps his stock Roses separate and cool. Chas. Henderson, James Hendricks of Albany, N. Y., and J. Thorpe used sulphide of potassium for Rose-mildew in solution of a quarter of an ounce to one gallon of water.

C. L. Allen, Garden City, N. Y., said that it is customary to abuse and misuse the weak. This is the case with that small but beautiful insect, the red spider. Like other spiders it is carnivorous, and never ate a plant in its life. Microscopic insects come to live upon the plants and the red spider to live upon them. It is a friend, not a foe. A healthy condition of plants, brought about by proper temperature, care in watering and ventilation, helps the plant to repel the microscopic parasite and leaves nothing for the red spider to live upon. To keep out-door plants healthy, nothing is used but rich soil frequently stirred and kept free of weeds.

1st Vice-Pres. J. K. Jordan of St. Louis had noticed that florists just commencing in business are not troubled with insects for a year or two. Their houses are new and the earth around them clear of disease or larvæ, and as long as this state continued they are comparatively exempt. He would build greenhouses with movable roof, and remove the sashes entirely during summer. Robt. Halliday of Baltimore spoke on Disadvantages of Cultivating and Advertising many varieties of the same species.

He advised to cut down the Rose list to one-tenth or more, while Dahlias, Camellias, Azalias and many other classes of plants

could be reduced one-half. It was moved and voted that a committee be appointed to reduce the number of varieties and also to revise the flower and seed nomenclature.

THE CONSTITUTION.

The president offered an excellent draft of a constitution, which after having been amended and revised by a committee was adopted. An amusing discussion occurred upon who should be eligible. Some members were afraid that the doors would be opened too wide, but finally the remark of Mr. Vaughn that he had not learned that any $2 had been refused, brought the objectors to a more practical view, and the matter was left as the committee worded it, which makes any Florist, Seedsman, Gardener, Superintendent of Parks, Dealer in Florists' Supplies or Amateurs eligible to membership. The officers are a President, First Vice-President, Treasurer, Secretary, an Executive Committee of nine and an additional Vice-President for each State, States having more than forty members being entitled to two. New York, Pennsylvania, Ohio and Illinois are thus favored.

FLORAL EMBELLISHMENT OF PARKS AND GARDENS.

H. De Vry, Supt. of Lincoln Park, Chicago, was announced to read a paper on this subject on Wednesday evening, but failing to appear, Wm. Hamilton, Supt. of City Parks, Allegheny City, Pa., gave a few general principles. Public grounds are for comfort, convenience and education. Shade and cleanliness make them comfortable. Walks must be very broad or only slightly curved to promote dispatch and convenience, and planting must be so arranged as to give the public a taste of and love for the beautiful. He would plant on the same principle that one would employ a school-teacher or buy school books; get the best. The best seeds and plants cost but little more than the poor. Of the wild garden and the carpet style he would give the best specimens of both. There are places where one style could not be used to the exclusion of the other. Lastly, try and do a little better each year.

C. L. Allen believed in object lessons every time. Did not believe in books, and he would teach landscape gardening by sending the student to nature and have him practice what he found there. Study things, not books. The conflict between men and books is unequal. Men instead of absorbing the books, become generally absorbed by them. Mr. Thorpe said that Mr. Allen does not seem to practice what he preaches, for he has a fine library and reads the books.

J. D. Carmody, Evansville, Ind., said books hold the combined knowledge of the world, and we should go slow in condemning them. To do away with books would be to retrograde many centuries.

THE CUT FLOWER TRADE.

Wm. J. Stewart of Boston in his paper said that Boston was the pioneer in the cut flower trade. He well remembers when New York depended upon Boston for Rose-buds, and how convenient it was for the Boston florists to ship to New York their surplus that had been handled over the counter all day. But unfortunately this trade was a thing of the past, for now New Yorkers not only raised their own Roses but shipped their surplus all over the country.

The immense demand for cut flowers necessitated the creation of the flower commission merchant, who purchases the products of hundreds of gardeners and distributes them among his customers who look to him for a regular supply. Much of the commission man's time is employed in explaining to *growers* why the price for flowers is so *low*, and to make clear to the *buyer* why flowers are so *costly*. The variations in the demand for flowers caused by holidays and grand fetes, etc., has been equalized by improved methods of keeping flowers, enabling dealers to bridge over periods of several days. Darkness, ice, and exclusion of air are important factors for keeping flowers. Rose-buds, Tuberoses, and Carnations are always in demand on account of their excellent keeping qualities. The trade in New York alone amounts to over $1,000,000 annually.

As with other products of the soil, it will be discovered, sooner or later, that some localities favored by cheap coal, abundance of sunlight, purity of atmosphere, and other advantages, are superior to others for raising flowers. These places will become large producing and shipping centers; refrigerator cars will carry the flowers to distributing points, and express messengers will be taught new ideas of transportation.

[The remainder of the meeting was occupied with a most interesting discussion on Roses, Summer Cut Flowers, Heating, etc., etc., a full report of which will be continued in our next issue.] L. B. PIERCE.

Miscellaneous.

POISONS DESTRUCTIVE TO INSECTS.

One of the oldest insect destroyers is "Flystone and Treacle." What is that? Flystone is Cobalt, a metal of rarity produced chiefly in the mining of arsenic and manganese and used in making blue pigment. The raw product is of a brownish color, and when mixed with sweetened water and placed in a vessel for flies to drink, destroys them by wholesale. When a sponge is wet with the same mixture or Flystone and beef tea it will catch ants; the fluid is death to fowls and small animals, too.

"Devil's Sugar," or Sugar of Lead mixed in water, was used as a wash for lice on plants, and was long held as the sovereign remedy for bedbugs. Metallic Mercury mixed with white of eggs and applied with a feather in cracks and crevices was a famous remedy, but that is superseded in latter days by the soluble products of the latter metal, Corrosive Sublimate, mixed with alcohol or water and sal ammoniac.

Chromic Acid, which in strong solution will dissolve a mouse, is as a destroyer of organic life, animal or vegetable, very potent.

Coal tar and its products, Creosote, or Carbolic Acid of various strengths overpowers all other ordinary smells and eradicates them by prevention of putrefaction. Coal oil and oil of wood tar destroys both animal and vegetable life.

Red Bichromate of Potash and Paris Green, two corrosive poisons destroying the membrane of all flesh, inflicting upon man irritating sores, acting with deadly effect upon small animal and insect life, and alike scorching to vegetation, are more or less soluble in water, the first to the greater degree. Paris Green is about one-fifth Arsenious Acid, the rest Blue Vitriol and Pearl ash with a little Acetic Acid thrown in it to make it bright. Red Chromate of Potash is a combination of Chrome, Iron, Potash and Sulphuric Acid.

Sulphur, by its odor or mechanical contact, proves certain death to some insects. In a conservatory sulphur smoke acts with similar effect upon parasites, as it does upon bees in a hive.

Borax is distasteful and annoying to ants and roaches but of little avail in the garden. Salt to slimy worms or snails is a terrible dressing. Saltpetre water will make plants grow and kill grubs.

Nicotine, the death dealing principle in Tobacco, will kill an elephant or a cat, say nothing of a worm or flying midget whose substance is but the fraction of a pennyweight. Tobacco-tea obtained by steeping stems in tepid water for a day and then straining the liquor concentrated by slow evaporation, is effectively destructive of hosts of minute winged and creeping things. Snuff is not certain.

"Insect Powder," *Pyrethrum roseum* and *P. carneum*, grows away up among the mountains of Armenia just below where Noah's ark is said to have rested. This is the "Persian Powder." Another variety is the "Dalmatian," or *Pyrethrum cinerariæfolium*, which came from eastern Europe. Each when *fresh* or well kept from air will kill parasites on man or beast, or in clothing; made into tincture it is a great aid in window gardening. The new California Powder is equally effective. These powders first stifle and then kill the insects. Burned on a tin plate or shovel they will kill mosquitoes.

Hellebore when fresh is far more powerful than when two years old; when three and four years old it is like old Sage for sausage-meat—of small account.

Stavesacre seed tea is death-dealing to lice on plants, vines and cattle, but the decoction is also certain death if it is drank.

Cayenne Pepper or Capsicum is very hard on Caterpillars and other soft insects, but this like other vegetable powders is worth most when fresh and oily, for all vegetable insecticides appear to lose their effectiveness by age.

Grubs that work under ground are the most difficult to destroy, for Mother Earth is an absorbent of all noxious substances, nevertheless, the day of doom is coming. Bisulphide of Carbon,—a volatile, odorous liquid which will cause a headache to be remembered,—either alone or mixed with a Potash base, will kill grubs and cut-worms and the phylloxera as well.

From the above it will be seen that remedies are abundant, and fortunately scarcely any which act with destructiveness upon the lower forms of animal life will prove equally so to vegetation. True as it is that we may kill nine worms and the tenth takes the plant, yet with care and judgment that comes with experience, nearly all the products of the greenhouse, the garden, or the farm can be saved from their insect enemies. For when man was sent to till the soil, power and dominion over all was given him.

BENJAMIN HAMMOND.

WOMEN WORKERS

IN THE GARDEN AND FIELD.

Martha Hamilton, Birmingham, Penn., is credited with the successful supervision of 60,000 silk worms.

German women say they like to work out doors part of the day rather than to be employed every day in the house, and the men folks help about the cooking.

Mrs. Walcott of Massachusetts, says that the out-door work of a farmer is not so hard as that of the kitchen, and that many women in Kentucky are doing farm work rather than bury themselves in kitchens.

Miss Kreamer, of Helena, Ark., has planted 22 acres in corn and 7 acres in cotton, having done the plowing herself and attended to the crop so far without help, and expects to harvest a bale of cotton and forty bushels of corn to the acre.

Gardening is peculiarly woman's outside sphere; she takes a pleasure in it; it does her good—mind and body. It is not labor, but exercise. It has an elevating influence upon herself and family, and, too, upon the neighborhood. It induces in the community that noble contention, or rather emulation, of who can grow the most and prettiest flowers, and who can have the sweetest and most cheerful homes.—*Rural New-Yorker.*

Mrs. Julia B. Nelson, widow, formerly a teacher in the South, a noted temperance worker and a woman suffragist, was left by a husband a 240-acre farm in Minnesota, which she cultivates successfully by the aid of three intelligent colored youths, former pupils of hers in the South. She is a good judge of horses, and selects with care the varieties of seed she plants. No barley is planted on her farm, because she knows the chief demand is from brewers.

It is said of a Boston woman in the South, the daughter of a once wealthy man, that being reduced to the necessity of providing for her own wants, she resolved to manufacture pickles and preserves for the market. She told her friends, and they promised to be customers. She found no difficulty in selling all that she could make with her own hands. The next year she enlarged the business, and the third year she expanded it still further, her condiments having by this time acquired a reputation in the market. Now she is making a net profit of about $10,000 a year.

The German, Flemish, and Dutch women who help husband or father in his fields are strong, hardy women who rear a stalwart race. Half the fine ladies who now find a few turns on a piazza almost too much for them, would be all the better for a graduated scale of garden work. Beginning with a quarter of an hour a day, they would find at the close of a month that they could easily do their two hours, and that they ate and slept as they never had done before, while they forgot that such evils as blue devils and nerves had any existence.—*From an English Parliamentary Reporter.*

ANSWERS TO CORRESPONDENTS.

Failure with Lilies.—*M. C. C., Baltimore, Md.*—The *Lilium auratum* mentioned in our July number is still in glorious bloom, some of the stalks bearing a dozen magnificent flowers. There are no flowers that we are more anxious for that our readers should succeed with than Lilies, and yet without a complete knowledge of all the existing conditions it is impossible to tell why Lilies fail. There is always less certainty when planting in spring than in fall, as bulbs obtained in spring have generally been dug the previous fall, and been kept out of the soil all winter. The sooner Lilies are replanted after having been taken up the better, and for this reason fall planting is usually more successful; with *L. candidum* it is a necessity, as this species makes its leaf growth during autumn. Paris Green will not help the bulbs in the least, but may injure them seriously. If your soil is too heavy or wet, make raised beds, plant deep — except *L. candidum* — place sand around the bulbs, and mulch in winter.

Some Floral Topics.—*W. A. C., Charleston, S. C.*—The best season for pruning Azaleas is just after blooming, yet it may also be done after the plant has made its season's growth. The same applies to the roots.

Primroses of last year may be readily propagated by division, and, if properly cared for, will bloom the following winter. The way usually practiced by florists is to pack moss around and between the shoots. This induces root-growth of each branch, and insures the growth of the separate divisions after being pulled apart.

Violets may be forced into bloom at any time in winter, if the plants are healthy and vigorous.

The *three best* Roses for winter-forcing can hardly be named unqualifiedly, but the following are as good as any: Catharine Mermet, rose; Perle des Jardins, yellow; Niphetos, white.

Restoring Dry Bulbs.—*T. O. P., Laprairie, Can.*—The best way to restore dry bulbs is to pack them in damp—not wet—Sphagnum Moss until they show signs of growth, when they may be planted in soil. If the moss is kept too wet, the bulbs will invariably rot.

Plants for Name.—*Carrizo, Texas.*—It is rarely possible to name a plant from a single leaf, although it may be easier to say what it is not. The leaf named "Orchid" is not that of an Orchid nor of anything allied to it. The plant "started from wild garden seeds" is *Centranthus macrosiphon*, Red Valerian, but it is not always red. "Resedu," so far as can be determined from the specimen, is probably correct, a species of Mignonette. *Zauschneria Californica* is a very pretty plant; we cannot find it in any of the seed catalogues at hand.

Best Time for Planting Raspberries.—"*Rubus*," *New York.*—Either in the fall after the leaves have fallen, at any time in October or November, or in spring as early as the ground becomes fit to work. On dry soil, autumn planting is to be preferred.

Seeding Lawns.—*B. M., Philadelphia, Pa.*—The earlier in autumn grass seed is sown the better. If the ground is in good condition the month of August is an excellent season for seeding a lawn.

OUR BOOK TABLE.

The American Fruit Culturist, by John J. Thomas. Wm. Wood & Co., New York, Publishers. Price $2.00. More than thirty years ago the author published the first edition of his "Fruit Culturist," then the only existing complete and reliable work on American Fruit Culture. It was subsequently much enlarged through several revised editions until in its new edition, just issued, it is brought down to the methods, and varieties of fruits of the present date. Several other excellent works on fruit culture have appeared within these three decades, but none of them are so admirably and conveniently arranged for the use of the busy man, as well as for the beginner in fruit culture, nor do any give so great an amount of practical, reliable information, elucidated by hundreds of accurate, plain illustrations in so small a compass. The first part of the work treats of the general principles and practice of fruit growing, the second of the different kinds and varieties of fruits, containing also a convenient monthly calender of work in the nursery, orchard, and fruit garden, also a glossary of pomological terms, and other useful information. The fruit grower who does not avail himself of the aid that a book like this affords, deprives himself of one of the most essential means to success.

Free Niagara, Nature's Grandest Wonder. New York's Imperial Gift to Mankind. Published by Matthews, Northrup & Co., Buffalo, N. Y. Price 30 cts. A highly artistic and tastefully gotten up pamphlet giving the history and completion of the movement to complete the Free Niagara Park. Many artistic illustrations embellish the work, and its typographical features are of a high order.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

Dr. T. H. Hoskins of Newport is a lucky nurseryman. He writes us that for years he has been unable to supply the orders received. The good doctor is very conscientious, and we believe could not bring himself to send out poor stock. So his reward is great, in a good trade, and the knowledge of well doing. May his kind multiply.

A. Brackenridge of Governstown, Md., writes that his advertisement of Orchids in THE AMERICAN GARDEN has paid him well, and that he proposes to have a large sale in Boston about September 15, at which all his best Orchids will be offered.

The fall trade in bulbs promises to be largely confined to a few houses, many dealers having withdrawn from the trade on account of the risk of loss and the competition which has cut down prices to a comparatively low basis. Yet the interest in bulb culture seems to be on the increase.

Horticulturists say that fall setting of pot-layered Strawberries is on the increase, but one of the largest dealers tells us that the trade in potted plants is very unsatisfactory and that there is "very little money in it," and that the demand is comparatively small. If this is generally true where does the "increase" come in?

Mr. B. K. Bliss, who has been spending some months in France at the home of his daughter, and visiting the European seedsmen, has returned to this country much improved in health and spirits.

Mr. D. S. Marvin of Watertown, N. Y., has been "enjoying poor health" of late, but now, we are glad to learn that he is recovering and getting back some of the enthusiasm which has prompted him to produce some remarkably fine varieties of fruits. Mr. Marvin deserves well of the fruit-growing public.

The nurserymen and fruit growers along the Hudson River have suffered severely from drouth and bad weather this year, and nothing but patience and pluck will pull them through. But most of them possess these characteristics to a marked degree and we expect to see them all right again before long.

It seems to be a well-settled fact, though many people don't yet accept it, that the days of great profits in the seed trade are ended. Those houses which make money nowadays, are those which take extraordinary care in the purchase and selection of stocks, and sell only seeds of prime quality, true to name. Though now and then some party will make a large profit on poor seeds, or a reintroduced old variety under a new name, yet his success is sure to be temporary and he has no cause to wonder if his trade quickly falls off in volume in subsequent years.

GOOD WATER.

The Waukesha Glenn water advertised in this issue is one of the very finest of all table waters, and is fast becoming known as a specific for many diseases of the stomach and bowels. It seems like "carrying coals to Newcastle" to bring spring water from the West to the East, but the Waukesha Glenn is gaining many converts to its virtues in all sections.

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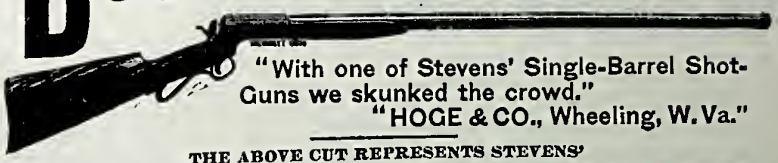

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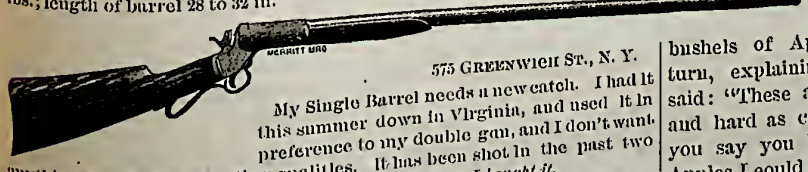

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"This milk is rather warm for such a cold morning," said a customer the other day to a milk boy. "Yes, father put hot water in it, instead of cold, to keep it from freezing," was the simple and truthful reply.

"There was countless millions of mosquitoes down on the marsh to-day," said Johnny. "Johnny," said mamma, "don't exaggerate." "I don't zaggerate, ma; there was countless millions, for Jimmy Brown and me counted 'em."

To keep her boy from the school board, a London fruit seller adopted the expedient of putting him into an orange box, which was safely corded up and shoved under the bed whenever she had occasion to go out, remaining there till her return.

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Man is a harvester. He begins life at the cradle; learns to handle the fork; often has rakish ways and sows wild oats, threshes his way through the world, and when he arrives at the sere and yellow leaf. Time mows him down, and his remains are planted on the hillside.

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Continued on page 240.

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Good Housekeeping (1 year). (Price $2.50.) A semi-monthly journal "Conducted in the Interest of the Higher Life of the Household." Conceived in a spirit of real love for the promotion of "the homes of the world," and executed by some of the wisest and brightest of practical men and women who have ever worked for this good cause. Good Housekeeping merits the warm reception and great success it is meeting with. Illustrated, and beautifully printed on fine paper. (Price $2.50.)

(b.) *Given as premium for* 5 *subscriptions to The American Garden at* **$1.00** *each.*

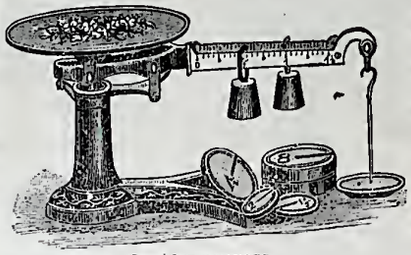
14.—(a.) *For* **$1.20**, *The American Garden* 1 *year, and*

Green's Fruit Grower (1 year), a quarterly journal of fruit culture. Bright, reliable, full of solid information and good sense, written in a style that it is a real delight to read; and the book, **How to Propagate and Grow Fruit,** by Chas. A. Green, well written and thoroughly reliable, covering all phases of the subject. (Price of paper and book 50 cts. each.)

(b.) *Given as premium for* 1 new *subscription to The American Garden at* **$1.00.**

A FEW CHOICE IMPLEMENTS.

15.—(a.) *For* **$3.00**, *The American Garden* 1 *year, and*



Little Detective Postal Scale. (Price $3.00.) Weighs 1-4 oz. to 25 lbs. Hundreds of thousands sold. The best of all low-price scales; equal in value to any $5 or $10 scale we have seen. For House or Office it is equally efficient. One side of the beam shows the cost of postage *in cents* of any article weighed. Specially fine for seedsmen and nurserymen. Sent by express.

(b.) *Given as premium for* 5 *subscriptions to The American Garden at* **$1.00** *each.*

16.—(a.) *For* **$18.00**, *The American Garden* 5 *years, and*

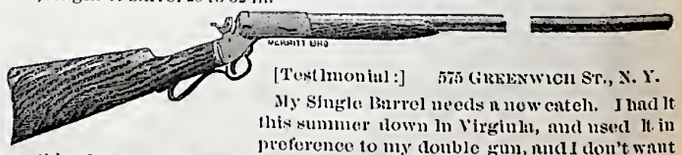
Stevens' Hunter's Pet Rifle. (Price $18.00.) Weight about 5 1-4 lbs.; length of barrel, 18 inches, good for 40 rods; 22 rim, 32, 38 or 44 calibre; rim or central fire; with combined sights. That it is made by J. Stevens & Co., is proof of its quality. A specialty, first made for a geological surveying party going to the Rocky Mountains, who wanted a gun to knock over a bear, which would be as light and portable as possible. Each gun thoroughly tested and remarkably accurate. With it you can knock over a woodchuck, or animal of similar size, 50 rods away, with great certainty, and some state that they do even better work at a quarter of a mile away. All of the "STEVENS" arms are made for every day folks, and at a price within the reach of all; require no fixings and no previous knowledge of arms; no special cartridges.

The publisher of this journal has always loved a gun and began to shoot at 10 years of age, though hard work and the business of life has kept him from this pleasure in late years. But he thinks that boys should be early taught the proper use of guns, and that only *good* guns should be put into the boy's hands. That is one motive for making this offer, and for selecting so good and low-priced a weapon as the "Stevens' Hunter's Pet."

(b.) *The* 18-*inch "Pet" given as a premium for* 30 *subscriptions at* **$1.00** *each.*

17.—(a.) *For* **$12.50**, *The American Garden* 4 *years, and*

Stevens' Single Barrel Breech-Loading Shot-Gun. (Price $12.50.) With forehand stock and Stevens' patent bolt; 12, 14 or 16 gauge; weight 6 to 7 lbs.; length of barrel 28 to 32 in.



[Testimonial:] 575 GREENWICH ST., N. Y.

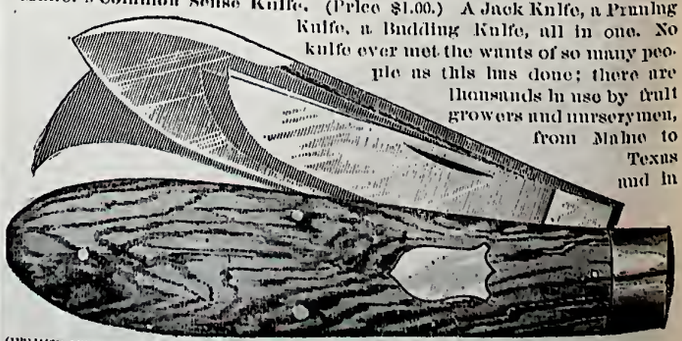
My Single Barrel needs a new catch. I had it this summer down in Virginia, and used it in preference to my double gun, and I don't want anything better as to shooting qualities. It has been shot in the past two years over 2000 times, and *has required no repairs since I bought it.*

Sent by Express. ROBT. GORDON.

(b.) *Given as premium for* 20 *subscriptions to The American Garden at* **$1.00** *each.*

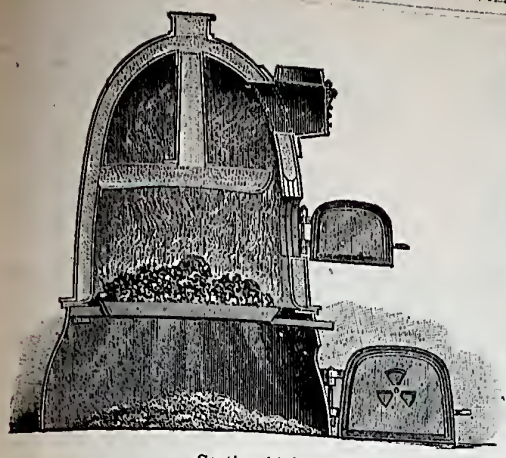
18.—(a.) *For* **$1.75**, *The American Garden* 1 *year, and*

Maher's Common Sense Knife. (Price $1.00.) A Jack Knife, a Pruning Knife, a Budding Knife, all in one. No knife ever met the wants of so many people as this has done; there are thousands in use by fruit growers and nurserymen, from Maine to Texas and in



orange groves of Florida and California. Sent postpaid.

(b.) *Given as premium or* 2 *subscriptions at* **$1.00** *each.*



Sectional View.

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VENTILATING APPARATUS

For Raising Sashes in Greenhouses.

Galvanized Screw Eyes and Wire for Trellis-work.

Send for Catalogue.

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HEADQUARTERS for NIAGARA, now offered without restrictions to planters for first time. 2 yr. vines, mail, $2 each. None genuine without seal "Niagara White Grape Co." Special Terms to Agents.

Also other Small Fruits, and all old and new varieties of Grapes. Extra Quality, Warranted true. Cheap by mail. Low rate to dealers. Agents wanted.

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THE LARGEST STOCK IN AMERICA. Prices Reduced. Illustrated Catalogue FREE.

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Cheapest—Best, Fire and Waterproof. Adapted for new or old roofs. Anybody can apply. Write at ONCE for Book Circular. INDIANA PAINT AND ROOFING CO., NEW YORK.

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Lowest Prices—Finest Goods—Largest Stock. Address with stamp for Illustrated Catalogue, GEO. E. GLINES, MANUFACTURER, 143 DUANE STREET, N. Y. CITY.

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GREEN-HOUSE APPARATUS

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Best Patterns

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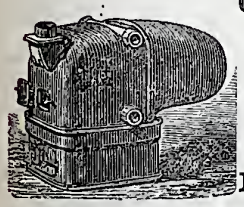

Corrugated Fire-box Boiler, for large Green-houses.

Base-Burning Water Heater, for small Conservatories.

Send 4 cents postage for Illustrated Catalogue and Price List.

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Has again surpassed all others, over 50 best varieties, at POMONA NURSERIES, and received three more FIRST PREMIUMS and two more SPECIAL AWARDS at Moorestown, Vineland and N. York Strawberry Shows. Also the FIRST PREMIUM and SWEEPSTAKE PRIZE over all other new varieties at Providence, R. I. Send for testimony from various States. POT-GROWN PLANTS NOW READY. Lawson and Kieffer Pears, Wilson Jr. Blackberry, Grapes, &c. WM. PARRY, Parry, N. Jersey. Catalogue free.

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A CONCISE and practical treatise on grape culture with illustrations, and instructions showing how to prune and train the vine so as to ensure the most perfect success, thus making grape growing—natural conditions being favorable—a pleasant and profitable business. Also a carefully estimated cost of an acre of vineyard each year up to full bearing age. Sent by mail on receipt of twenty-five cents. J. H. TRYON, Willoughby, O.

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Collects for the Trade, Clematis crispa, Viorna, and Virginica; Comus serica; Lilium Catetasi and Superbum; Zephiranthes Atainasoe (Fairy Lily of the South). Coculus Carolinus, Lucca, Carolina Fly-trap, &c. Also solicits contracts for growing Tuberoses-Pearl and double for next season. 30,000 bulbs of Tuberoses now ready for delivery at less than usual rates.

Best & most profitable LATE WHITE PEACH: choice lot of Peach trees including most desirable kinds. William's Early Red, best early Apple. Good stock Apple Trees: most popular & late keeping varieties. Early Richmond, Montmorency & other choice Cherries. Grapes, Strawberries, Raspberries, new & old sorts. 200,000 2 year old Asparagus roots Large stock shade & ornamental trees. Catalogue free. S. E. Rogers & Son Mt. Holly N. J

CABBAGE SEED Choice Long Island stock of all leading sorts. Positively Unexcelled. Price Lists Free. Francis Brill, Seed Grower, Riverhead, L. I., N. Y.

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We offer for Fall planting the largest and most complete collections in the United States of Fruit Trees, Standard and Dwarf, Grapes, and all the small fruits, New Gooseberry "Industry," Ornamental Trees and Shrubs Roses, of every class, Hardy Bulbs.

Catalogues sent as follows: No. 1, Fruits, 10c.; No. 2, Ornamental Trees and Shrubs, 15c.; No. 3, Strawberries, No. 4, Wholesale, No. 5, Roses, No. 6, Bulbs free.

ELLWANGER & BARRY.

NEW AND RARE

Young Evergreens,

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Norway Spruce, Siberian Arbor Vitæ, Golden Arbor Vitæ, Hemlock, Balsam, Bartlett Pear, Mulberry, Blackberry, Raspberry, Strawberry plants, etc., in quantities to suit.

J. Butterton,

The London Nursery, HAMMONTON, N. J.

Shippers', Pride Plum.

Now send for full particulars of our New Plum for fall delivery. Prices reduced. Address H. S. WILEY, Cayuga, N. Y.

COMET 999,999 Strawberry Raspberry Blackberry & Currants, Grapes, Fruit Trees, &c. All BEST old sorts and NEW. MAY KING, MARLBORO, COMET, FAY, EARLY CLUSTER, NIAGARA, KIEFFER. See Catalogue Free. J. S. COLLINS, Moorestown, N. J.

CERTAIN WEALTH TO FRUIT GROWERS How to remove Curculio and Fruit Borers permanently. Also how to keep the bark of all fruit trees perfectly smooth, thus insuring a full crop yearly *without fail*. For full particulars send your address with 20 cents, silver preferred, to A. E. HIGGINS, Outlet, Luzerne County, Pa.

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Our New Catalogue gives practical hints on how to grow these beautiful plants. We are now making these special offers:

12 CATTLEYAS,	12	kinds	good	plants for	$12.00
12 LÆLIAS,	6	"	"	" "	9.00
12 ONCIDIUMS,	12	"	"	" "	9.00
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We have lately added to our collection 4,000 Established Orchids, and from 3,000 to 5,000 Not Established. These fine plants are as cheap as good Roses; write to us, stating what you want, and what size of plant, and we promise to answer you by return mail. We grow to sell and only ask a trial. Our latest acquisition is

Plants from Guatemala.

From the great exhibit at the New Orleans exposition, comprising over 7,000, among which are fine masses of *Lycaste, Skinnerii, Odontoglossum grade, O. pulchellum, majus, etc.*

Our collection is unequalled by commercial florists in America.

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FOR FLORISTS, GARDENERS & AMATEURS.

A superior stock just imported from the noted growers of Holland and France, of the

Finest Quality at Moderate Prices.

Hyacinths,	Lilies,
Tulips,	Ranunculus,
Crocuses,	Snowdrops,
Narcissus,	Roman Hyacinths.

Our Fall Catalogue is Now Ready,

and will be sent free on application. It is fully illustrated and contains descriptions and cultural directions for all kinds of bulbs and plants for fall planting.

Roses and House Plants,

Trees, Vines, Small Fruits

in great variety.

JOSEPH BRECK & SONS,

51, 52, 53 No. Market St., Boston, Mass.

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C. W. IDELL,

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FRUIT, PORK, POULTRY,

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Special attention paid to Fruits. Stencils furnished.

"GOLDEN QUEEN"

the most desirable of all raspberries. In Quality rivalling the famous Brinckle's Orange, very large and the most charming translucent yellow imaginable; canes fully equaling the strong growth of Cuthbert, even hardier and more prolific. Send for full particulars, mailed free. All kinds of **Fruit Trees and Plants** of best quality at fair prices. Lawson's Comet Pear, Japan Plums, Meech's Quince, Parry Strawberry, Early Harvest Blackberry, and other leading novelties in large supply. *The largest stock of Blackberry plants in the World:* a complete assortment of Nut-bearing Trees. **Lovett's Guide to Fruit Culture** is a profusely illustrated book of 70 pages, faithfully describing all valuable varieties of hardy fruits, with a rich fund of information on culture and management; price with colored plates 10 cts., without plates 5 cents. Price List of Trees and Plants free.

J. T. LOVETT, Little Silver, N. J.

WILD FLOWERS For Cultivation. Orchids, Lilies, Ferns, Alpine, &c. SEND FOR CATALOGUE.

EDWARD GILLETTE, Southwick, Mass.

Seeds and Plants.

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Farmers, send your address for particulars of new varieties of Wheat. We have Wheat that always yields five to ten bushels more per acre than Fultz, and will make ¾ of a crop when Fultz or Clawson entirely winter kills. We don't claim each of a dozen kinds to be the best. We know which are the best and sell you such. **BE SURE** to see our catalogue for reliable information before placing your order. Introducers of and headquarters for true **Martin Amber** Wheat. **J. A. EVERITT & CO., Seedsmen,** WATSONTOWN, PA., or INDIANAPOLIS, IND.

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A very large stock of choice East Indian Orchids,

Viz: Phalænopsis, Renanthera, Saccolabiums,	Ærides, Cypripediums, Dendrobiums, &c.

Also Central and South American Orchids, as

Cattleyas, Lælias, Lycastes,	Oncidiums, Odontoglossums,

well grown plants and at as low rates as it is possible to offer these fine sorts.

NEW AND RARE PLANTS.

A large collection of Hothouse and Greenhouse Plants which are carefully grown and offered at low rates.

DUTCH BULBS.

Large importations direct from the leading growers in Holland, First quality Bulbs. Catalogues on application.

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600 ACRES. 13 GREENHOUSES.

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We offer for the Fall Trade a large and fine stock of every description of Fruit and Ornamental Trees, Shrubs, Roses, Vines, Small Fruits, Hedge Plants, Fruit Tree Seedlings and Forest Tree Seedlings. Priced Catalogue, Fall 1885, mailed free on application. Address

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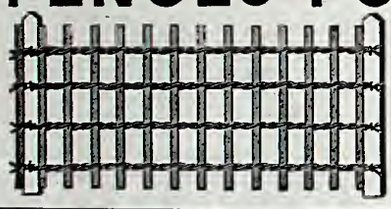
For Sale Cheap!

500,000 Prime 2 year Apple Seedlings, of healthy growth and hard, firm wood. None better for root grafting or for budding stocks. Sample sent by mail by enclosing 6 cents to pay postage. Address,

STEPHEN HOYT'S SONS, New Canaan, Ct.

FENCES FOR FARMERS



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Prettiest, Cheapest, and Most Durable. Can be made any size on our Standard Fence-Making Machine. Any farmer having 250 rods of fence to build can make a machine pay for itself. Owners of machine can then make from **$10** to **$25** a day selling fence to his neighbors and have a manufacturing business at home. Exclusive territory free. Agents that sell machines make from **$50** to **$100** a week. Illus. catalogue, terms, &c., free. **STANDARD MFG. CO. Cincinnati, O.**

Bulbs and Plants!

I import my own bulbs, &c., and can sell to all at wholesale prices, the finest the market affords. SEE PRICES.

Hyacinths,	50	cents per dozen.
Tulips,	25	" " "
Narcissus,	35	" " "
Crocuses,	5	" " "

WRITE FOR FALL CATALOGUE.

E. HIPPARD, Florist,

Youngstown, Ohio.

Mention THE AMERICAN GARDEN.

DESTRUCTION TO INSECTS.

THE ROSE TOBACCO INSECTICIDE SOAP.

Is sure Destruction to every species of Insects on Flowers, Plants, Shrubbery, Trees, and Animals.

It is made of the Gum of the richest Virginia and Kentucky Leaf Tobacco, will not injure the softest growth but acts as an excellent fertilizer.

Sample packages sufficient for three (3) gallons of water sent by mail on receipt of 20 cents.

ROSE M'F'G CO.,

17 SOUTH WILLIAM ST., NEW-YORK. Manufacturers of Tobacco Extract Preparations.

ELECTROS and Engravings for Florists, **Seedsmen**, Nursery-men. 10,000 in stock.

Send for Catalogues.

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"HAMMOND'S SLUG SHOT" IN VIRGINIA.

Office of T. W. Wood & Son, Seedsmen and Florists,
1518 E. Main St., Richmond, Va.,
July 25, 1885.

MR. BENJ. HAMMOND, *Fishkill-on-Hudson, N. Y.:*

DEAR SIR—This is the second year I have used **"Hammond's Slug Shot"** on Cabbages, Potatoes, etc., and beg to testify to its efficacy in quickly clearing out Cabbage Worms, Potato Bugs, etc. It is the cheapest and best preparation I have ever tried, and should be universally used as a cheap exterminator of insects preying upon vegetable products.

I have sold a quantity of it which has given universal satisfaction.

Yours truly,

T. W. WOOD.

TRY DREER'S GARDEN SEEDS

Plants, Bulbs, and Requisites. They are the best at the lowest prices. Calendar for 1886 mailed Free. Address,

HENRY A. DREER

714 CHESTNUT ST. PHILA.

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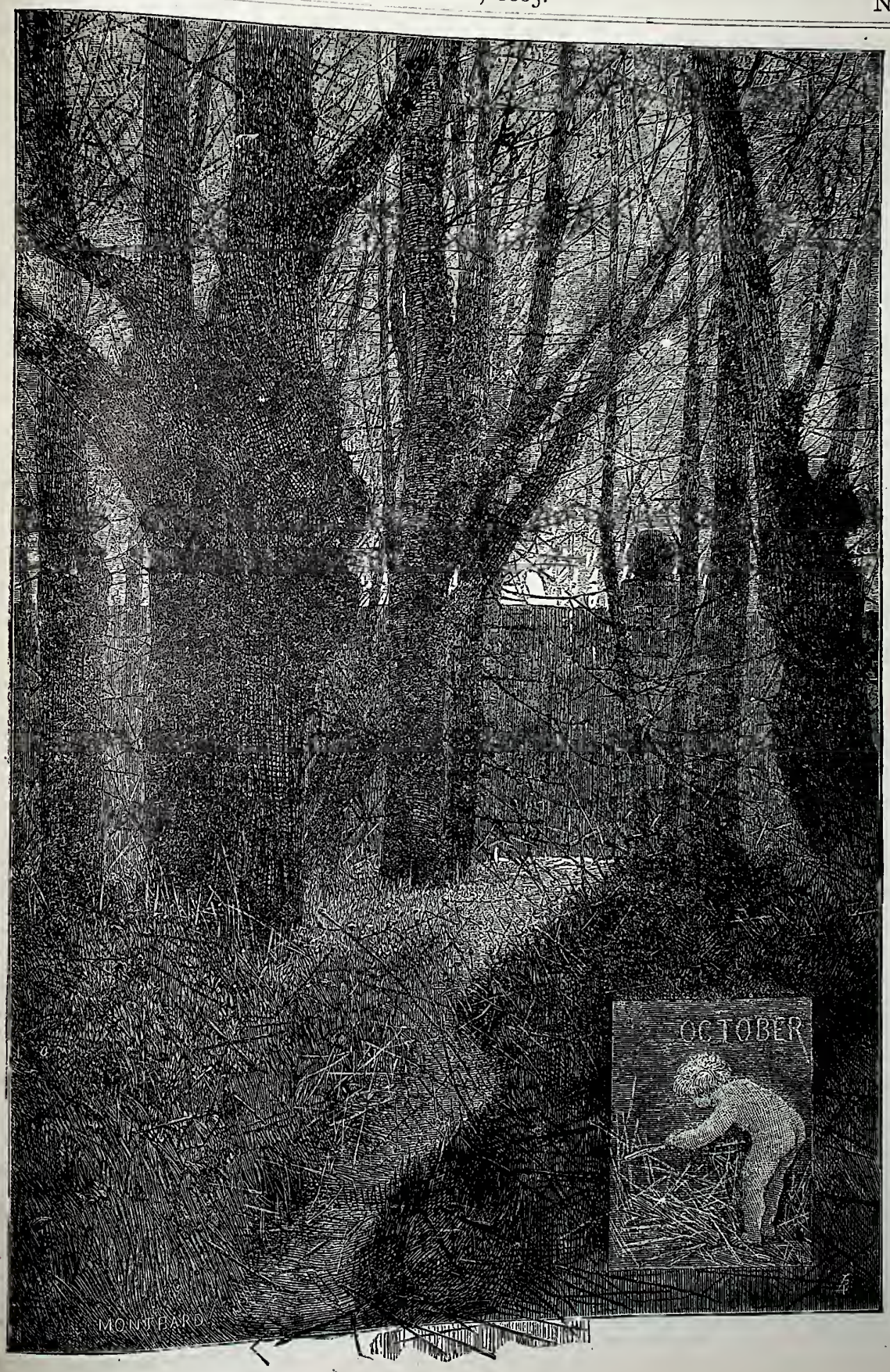
The American Garden

A Monthly Journal of Practical Gardening.

DR. F. M. HEXAMER, Editor.

Vol. VI. (Old Series, Vol. XIII.) OCTOBER, 1885. No. 10.



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The American Garden.

TO STRANGERS.

This number of THE AMERICAN GARDEN is sent to several thousand intelligent people who ought to be interested in its contents, and which to many of them ought to be worth a good many times the subscription price of only $1.00. "Now" is peculiarly the time to subscribe, for on January 1st the price will be raised to $2.00 a year, so great is the expense of making so good a magazine as this. Furthermore, all subscribing now will get the numbers for the rest of this year without extra charge.

A CHANGE IN THE SUBSCRIPTION PRICE

Of The American Garden.

After January 1st next, the subscription price of this magazine will be $2.00 a year. This change is made because of the great expense of making such a journal as this, and because we propose to continue making improvements and increasing its size as circumstances may dictate or require. We feel sure that readers will endorse this movement, as many of them have already expressed surprise at the low price of the magazine.

All present subscribers, even if their subscriptions expire *after* January 1st, have the privilege of renewing at $1.00, and also of subscribing for 2, 3 or 5 years at $1.00 a year, providing only that their orders are sent in *before* January 1st.

THE COMMITTEES

FOR THE AWARD OF THE AMERICAN GARDEN'S TEN $100 PRIZES.

The following gentlemen have been appointed by the Society of American Florists, as the committee from that society to award the two $100 prizes (Nos. 9 and 10) offered by THE AMERICAN GARDEN. The gentlemen are so well known that all will feel sure that their awards will be just.

John Thorpe, Queens, N. Y.; Rob. Craig, Philadelphia, Pa.; Rob. Halliday, Baltimore, Md.; E. G. Hill, Richmond, Ind.; Harry Sunderbruch, Cincinnati, O.

THE CINCINNATI MEETING.

Mr. John Thorpe, who has done so much hard work in the organization of the Society of American Florists, has reason to be proud of the great success of the first annual meeting. In a private note expressing his regret at our enforced absence from the meeting he says: "We really had so much meat to digest there was more than enough for all. The work has been heavy but the result has justified it, and I am satisfied. We shall have a glorious meeting at Philadelphia. I never saw such harmony, such eagerness for information and such talent at a new organization before. The people of America will be benefited by the Society of American Florists' transactions to a great degree, and if only for that I shall not regret the labor spent in the work."

$500 TO $1,000

OF PROFIT ON AN ACRE OF LAND.

One thousand dollars profit from an acre of ground may seem incredible, nevertheless it has been made a thousand times, and is being made every year by those who know how. The celebrated Celery lands near Kalamazoo, Michigan, a few years ago were a bog-swamp without any value whatever, until some enterprising gardener conceived the idea to drain the land and grow Celery on it. These fields are now as valuable as any farming land in the State; a car-load of Celery is shipped from the place every day, many thousand-dollar-profits per acre have been made there, and many growers have retired with a fortune made, within a few years, by growing Celery.

Mr. P. M. Augur's Strawberry field at Middlefield, Conn., mentioned in our last number, which yielded 16,000 quarts of berries per acre, must certainly have yielded a profit of over $1000. At Irvington, N. J., Mr. I. E. Brown sold from a piece of ground a little short of an acre, planted with Great American Strawberries, $1,800 worth of berries. He manured heavily, using 100 tons of stable manure, but the expense of cultivation was very light, so that after deducting all expenses, the profits amounted to considerably over $1000. With the use of glass for hot-beds and cold-frames three and four crops of vegetables may be grown in one year, yielding under favorable conditions still larger profits.

These instances of large profits are not cited with a view to induce anyone to leave a paying business and to embark in market gardening expecting to realize a fortune in a short time, but that they might serve as a stimulus to those who are plodding in old ruts, barely earning a living, and to show them that by progressing with the times, and by adopting improved methods, they may increase the products and profits of their gardens manifold.

OUR $100 PRIZES FOR BEST VARIETIES.

There seems to be some misunderstanding of our offers (see page 217). In a few words, our plan is simply this: to have these valuable prizes given to the *best* varieties, as named, which may not have been offered for sale previous to May 1, 1885. The conditions named are only for the purpose of getting as fair and broad tests of the varieties as possible. We believe that the committees will judge and award with impartial fairness, and possibly they may consider that the conditions we have given will require modification. We doubt if any mere technical points of *form* will be allowed by the committees to stand in the way of the fair competition of any variety. They will undoubtedly see that the *best* will be given their due honors.

HOW

THE SUCCESSFUL FRUIT GROWERS AND GARDENERS HAVE WON THEIR GREAT SUCCESSES,

Will be told in a series of articles soon to be begun in these columns. They will be written by the "kings" of horticulture, and will point the way plainly for others to go and do likewise. There is a demand for all of the first-class orchard and garden products that can be grown.

PHINEAS BROWN HOVEY.

Mr. P. B. Hovey, whose death we briefly noticed in a recent number, was one of the founders of the Massachusetts Horticultural Society, whose first meeting was held in his store in Cornhill, Boston, in 1829. He was its vice president five years, chairman of its committee of arrangements ten years, and a member of its fruit committee twenty-four years. All his life he took an earnest interest in the promotion of horticulture, beginning as a boy to know and cultivate flowers for very love of them. He began his business life as a florist, and in 1834 became the head of the firm of Hovey & Co., seedsmen and nurserymen, which established its store in Cornhill street, and was afterwards for twenty years at No. 7 Merchants' Row, finally moving to the present stand of the house at 16 So. Market Street, and with which he remained until 1883. In all those years Mr. Hovey was a recognized leader in horticulture, and his advice was often sought by those interested in similar pursuits. Mr. Hovey reached the honorable age of eighty-one years, nine months, and the society with which he was so long connected took appropriate means of recognizing their loss.

THE DEACON LETTUCE.

Mr. Goff's article on Lettuces has brought so many calls for the "Deacon" that our good friend Mr. Joseph Harris of Rochester, N. Y., its introducer, kindly offers to send a package of the "Deacon" seed to any readers of the GARDEN who will send him their names.

A GLADIOLUS EXHIBITION.

The large, commodious warehouses of P. Henderson & Co., in Cortlandt St., New York, presented a brilliant scene on the 25th and 26th of last month, when the firm treated its friends and patrons to one of the finest Gladiolus shows held in this city. Every available space was made use of in embellishing the place with flower spikes. All the leading varieties, old and new, were represented, and, being plainly labeled, offered a convenient opportunity for study as well as a guide to those desiring to make selections. The massive effect of the large groups of mixed varieties was almost dazzling.

In addition to Gladioluses, although these formed the leading feature, were several tastefully arranged collections of Lilies, Verbenas, Asters, Petunias, Phloxes, Uvarias, Foliage Plants, etc. We noticed also some choice collections of vegetables, twenty-four varieties of Tomatoes, twelve varieties of Peppers, seven varieties of Cucumbers, Egg Plants, etc., all of great perfection.

Many of our prominent professional and amateur horticulturists were among the visitors. The effect of such exhibitions cannot but be beneficial in developing a taste for the culture of flowers.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The annual Chrysanthemum Exhibition will be held in Horticultural Hall, Philadelphia, from November 10th to 13th. The Premium List is very complete, and the prizes so liberal that an exhibition of extraordinary excellence may be counted upon. Premium Lists may be obtained on application to the Secretary, A. W. Harrison, Horticultural Hall, Philadelphia.

METROPOLITAN MARKETS,

IN BRIEF PARAGRAPHS FOR THOSE COMMERCIALLY INCLINED.

A review of the month previous to September 15th.

FRUITS.

Apples.—Indifferent cooking Apples sold at retail 15 cts ½ peck, Selected table Apples bring fancy prices in Broadway; 50 to 75 cts. doz.

Bananas.—Both the red and yellow are plentiful. Color no difference in price at wholesale; 75 cts to $1.50 a bunch. At retail the red always are the dearest, selected bringing 75 cts doz; the yellow 60 cts; yellow ordinary 35 cts doz; red 40 cts.

Crab Apples.—Siberian are rosy and sound: retail 50 cts a peck basket, declined from $1 in a fort night and will probably go lower.

Grapes.—Hamburgs and Muscats are plentiful. Black retail for $1.00 to $1.50 a lb. California Tokay; wholesale at $5.00 a package of 40 lbs; retail in 5-lb boxes at $1.25. Dalifornia Muscats are $4.50 for 40 lbs: retail same as Tokay. California Cornichon which are a dark purple, are $5.00 a package, 25 cts a lb. Concords are 5 to 7 cts a lb wholesale; 10 cts, retail. Delawares 15 cts a lb retail, and 8 to 12: the selected sell in Broadway stores at 35 cts a lb. Niagaras bring 25 cts a lb retail.

Lemons.—A large consignment from Florida brought $3.50 a box of 250 to 300. Retail at 25 cts a doz. Messinas are rather scarce at 30 cts a doz.

Nectarines.—A few from California were offered early in September, but have disappeared; 60 cts doz in Broadway stores, the only places they were offered at retail.

Oranges.—Jamaicas are quite plentiful but are not very sweet yet. They cost $7.00 a barrel, or 75 cts a doz retail. Messinas are still preferred, at $5.00 a box, and 75 cts to $1.00 a doz.

Peaches.—The wholesale trade has been seriously interfered with by purchasers buying at the groves because the fruit receives less handling. Delawares have been plentiful and excellent, but the crop is now exhausted. Fine fruit sold at first at $3.00 a basket, declining to $1.25. Second quality sold for 75 cts to $1.00. "Stevens' Rareripes" from New Jersey now lead in excellence: $1.50 a basket wholesale, $1.75 retail. Crawfords retailed at $3.50 to $4.50 the first of the month; now $1.00 to $2.00 at retail. "White Heaths" for preserving are sound and handsome: $1.25 at retail. The last of August "Stump the World," "Mountain Rose" and "Old Mixon" led in white varieties, at 60 cts to $1.25 wholesale, 75 cts to $1·75 retail. In yellow fruit "Crawfords," "Reeves' Favorite" and "Susquehannas" (the two latter preferred) sold the same as the white sorts, excepting where selected, when they brought $2.00 to $3.00 retail.

Plums.—California Plums plentiful and exceedingly fine. Peach Plums, large, light, and sound, cost 35 cts a doz retail. Only state Plums are new in market, the "Damson," "Green Gage" and "Bush" Plums selling for 60 to 90 cts a box, or $3.00 to $3.50 a barrel wholesale. German Prune Plums are now 15 cts a qt, Green Gage 60 cts a peck. Purple Gage 50 cts, and Damsons 75 cts retail.

Pears.—The finest Bartletts are now coming from the Catskills: 75 cts a basket of 12 qts, or $1.25 for what is termed a bushel. Crates of 100, ripe, and chosen for table use, cost $4.00; in fruit stores 40, 60 and 75 cts a doz. The first of the month this quality brought $3.00 a bushel wholesale.

Tamarinds.—The pods of this tart fruit are sold by the pound in Broadway stores for making into beverages for invalids: 15 cts a lb retail.

VEGETABLES.

Artichokes.—French are 35 cts each, retail.

Beets have held steady in price for a month, $3.00 per hundred bunches of 4, 5 or 6 Beets, each, according to size; 5 cts a bunch retail.

Beans.—Lima Beans, like other vegetables of the "late crop" are very fine. Those known as "Potato Beans," which are large and full, a light green color, and boil moist and juicy, cost $2.00 a bag, or 20 cts a qt retail. "Ruby" Lima Beans are flatter and white: $1.50 a bag, or 15 cts a qt retail.

Corn.—Sweet Corn is still excellent; it has not varied in price for a month; $1.00 and $1.25 per 100, according to quality, or 15 cts a doz retail. Field Corn is 75 cts to $1.00 a 100 at retail, 10 cts a doz.

Celery has ceased coming from the West. New Jersey Celery improves daily; wholesale $2.00 a doz; retail 20 cts a bunch.

Cabbages, are $7.00 a 100, and 5 to 10 cts each, retail.

Cauliflowers are just beginning to improve: a satisfactory crop is promised. Selected cost $1.00 a doz wholesale, 65 cts a head retail.

Carrots $1.50 a barrel; retal at 5 cts a bunch.

Egg Plants; 50 c a doz wholesale; 5 c each retail.

Gherkins—For pickling, 25 cts a 100, all sizes.

Lettuce 50 cts doz wholesale, 5 cts a head, retail.

Melons.—Hackensack Musk Melons, plentiful and delicious, at first brought 20 to 30 cts each. now $1.50 to $2.50 a barrel; 8 to 12 cts each. In Broadway stores large ones bring 30 cts each. A new Melon from Bergen Co., N. J., called "Moore's Beauty," is one of a deep orange color inside, very sweet and highly flavored, Water Melons from New Jersey and Long Island retail at 15 to 35 cts.

Mushrooms are scarce, and have risen, from late August, from 25 cts up to 75 cts a qt.

Okra is 25 c a 100 down town, up town 10 c a doz.

Onions.—Red Onions are $2.00 a barrel and 10 cts a qt retail. White Onions cost $3.50 a barrel and 15 cts a qt retail.

Oyster Plant has just come in, unusually good; 75 cts to $1.00 a doz bunches; 10 and 15 cts a bunch

Potatoes.—The Long Island and New Jersey crops are small, quality excellent. Western promise to be abundant. Dealers state that were it not for the overflow from Europe in the spring, Potatoes would now be $1.00 a barrel higher. Early Rose, have been $2.00 a barrel for a month; some qualities are now selling for $1.75, but the majority bring $2.00. Peerless sold first at $1.75, now down to $1.12½ wholesale. Beauty of Hebron and Queen of the Valley cost $2.00 a barrel retail, Cullings, used by bakers, sell for 75 cts a barrel.

Sweet Potatoes. from Virginia are preferred: those from Maryland look more attractive. Both cost $2.50 a bbl wholesale, 30 to 50 cts a peck retail.

Peppers.—Green Peppers are one cent each retail. Spanish Peppers, the favorite for salads, 10 cts lb retail.

Radishes are again in market; wholesale, 6 bunches for 10 cts; retail, 4 bunches for 10 cts.

Spinach.—Out of market for some time has again appeared, 25 cts a qt retail.

Squash.—Summer Squash, 5 to 15 cts each retail. Marrows $1.50 a doz, 15 and 20 cts each retail.

Tomatoes are $1.50 a crate; retail 5 and 8 cts a qt. Egg Tomatoes bring the same.

Turnips.—Large White cost $1.75 a barrel; retail at 10 cts a bunch.

Water Cresses are 3 cts a bunch or 10 cts a qt retail; wholesale at 25 cts a doz bunches.

FLOWERS.

Lily of the Valley has never been forced so early in the season imperfectiota, as his year by Ernest Asmas of West Hoboken. The spikes are well filled with large bells. It sells for $8.00 a 100 wholesale, retails at 16 cts a spike.

Longiflorum Lilies cost 20 and 25 cts retail, 10 cts wholesale. *Callas* cost about the same.

Mignonette brings 20 cts a bunch of 25 sprays wholesale, retails for 15 cts a doz sprays.

Jasminum grandiflorum is one of the choicest little blossoms now in flower; wholesale for 30 cts a bunch, 50 cts at retail.

Gladioluses bring 5 cents a spike retail, 2 and 3 cts wholesale.

Tuberoses are a glut in the market, spikes selling for 5 to 10 cts each retail, 3 to 5 wholesale.

Forget-me-not is 25 cts wholesale, 35 retail.

Carnations are scarce at 35 cts a doz retail, 25 cts wholesale.

Smilax is 20 cts a string retail, 10 cts wholesale.

Roses.—Wholesale rates are given below: retail prices are about 25 per cent dearer. At this season it is almost impossible to give correct retail quotations, for dealers make their prices according to their customers. Perles des Jardins show improvement at $2.00 and $3.00 per 100; Niphotos the same. Bennetts and La France are $5.00 per 100; Mermets $4.00 per 100; American Beauty Roses, which are proving very useful from their size, color, and fragrance, are $8.00 per 100; Souvenir de Malmaisons $3.00 per 100. Teas, excepting Bon Silenes, which are $1.00, are 75 cts per 100

NOVELTIES.

Under this heading we propose to notice all new varieties of Fruits, Vegetables, Flowers, and Ornamental Shrubs and Trees introduced by reliable houses here and abroad. We wish to have it distinctly understood, however, that the fact of a novelty being mentioned here does not imply our endorsement or recommendation of the same, the descriptions being mostly those of the originators or introducers. This column is intended merely to serve as a record of the novelties of the day.

FRUITS.

Blackberry.—"Uncle Tom," J. T. Lovett, Little Silver, N. J. Claimed to be the hardiest large Blackberry in existence.

Gooseberry.—"Triumph," Geo. Achells, West Chester, Pa. An American seedling, described as large berry, great bearre, free from mildew.

Grape.—"Eaton," John B. Moore & Son, Concord, Mass. Bunch very large, compact, berries very large, round, black, covered with thick bloom; of less native odor than Concord.

Grape.—"Empire State," T. S. Hubbard, Fredonia, N. Y. Is now offered to the trade without restriction.

Plum.—"Desotto," R. Johnson, Shortsville, N. Y. Large, fine quality, red, attractive.

Plum.—"Shippers' Pride," H. S. Wiley, Cayuga, N. Y., and H. S. Anderson, Union Springs, N. Y. A high-flavored Plum of superior shipping qualities.

Raspberry.—"Golden Queen," mentioned last month, is now being introduced by J. T. Lovett, Little Silver, N. J.

Raspberry.—"Hilborn," W. H. Hilborn, Ontario, Canada. A Black-cap described as of very large size, jet black, second early, productive, and entirely hardy.

Strawberry.—"Great Ontario," R. Johnston, Shortsville, N. Y. Large, superior flavor, perfect flower, remarkably strong plant.

Strawberry.—"Lida," Wm. Parry, Parry, N. J. Seedling of King Cluster, pistillate, large, bright red, productive, season medium.

FLOWERS.

Androsace lanuginosa Leichtlinii.—Max Leichtlin, Baden-Baden, Germany. White flowers with purplish center; trailing habit.

Aristolochia elegans.—W. Bull, Chelsea, England. Flowers handsome in form, oval in outline, shell-like; was awarded a first-class certificate of the Royal Horticultural Society, England.

Begonia.—"Ville de Namur," H. Cannell & Sons, Swanley, England. Of the Rex type, foliage highly attractive, the colors being a mixture of claret and emerald green dotted with silver.

Begonia Wittensteini, figured in the Garten Zeitung, is a hybrid between *B. ascotensis* and *B. corallina.* Is said to be specially well fitted for training as a standard.

Caladium.—"Comtesse de Maille," Wm. Bull, London, England. Large, beautiful leaves with white, green and crimson; was awarded a first-class certificate.

Caladiums.—Hallock & Thorpe, Queens, L. I., N. Y., of ten new varieties of exquisite beauty, entirely surpassing any of the older kinds.

Crinum Sanderianum.—F. Sander & Co., St. Albans, England. A dwarf and very free-flowering species introduced from Sierra Leone.

Dahlia.—"Germania nova," H. Cannell & Sons, Swanley, England. Flowers double, each floret fringed, giving the flower a different appearance from other Dahlias; color, rose-purple; was awarded a first-class certificate.

Gastronema hybridum, a cross between G. sanguineum and *Vallota purpurea*, raised in Sir Trevor Lawrence's garden at Burford Lodge, Dorking, England.

Geranium.—Hallock & Thorpe, Queens, L. I., N. Y., are this season introducing: "Mary Hill," pure pink, large and very free-flowering; "S. A. Nutt," the very darkest of dark crimsons; "Thomas McMurray," rich tone of carmine red; "Golden Dawn," a pure tone of orange yellow, fine, large flowers of a decidedly distinct shade.

Gladiolus.—Messrs. Kelway, Langport, England, were awarded first-class certificates for: Princess Olga, Prince Albert Victor, Viscount Cranbrook, Princess Irene, Sir D. H. Wolff, Prince Henry, all said to be perfection in every respect.

Vegetables.

SEASONABLE HINTS.

To supply the lack of vegetable matter in the soil, there is no readier and cheaper means than the plowing under of some green crop.

Manuring with Rye is an excellent way to ameliorate and enrich a garden. The advantages of this plan outweigh the expense and labor manifold. After the crops have been removed the ground should be plowed or spaded, harrowed or roughly raked with a prong hoe, then seeded to Rye at the rate of two to three bushels per acre and harrowed or raked in.

The seed will soon come up, and the green growth presents a cheerful and pleasing appearance all winter when the ground is bare of snow. In spring, just before the land is to be planted again, the Rye is turned under. It will soon decay and leave the ground in a mellow and friable condition which will be perceptible for several years; but there is no reason why such a system should not be followed every year, at least in alternate parts of the garden.

Celery.—When banking up Celery, it is important that the soil which is drawn around the stalks should be in a mellow condition. This is best accomplished by keeping the ground well cultivated at all times. A prong hoe drawn along each side of the row does the work completely.

Sometimes it is found difficult to keep the soil from working in between the leaves and stalks when banking up. By wrapping a piece of soft oil-cloth around the plants, drawing and pressing the soil against it, and then withdrawing the cloth, the danger of the soil covering up the heart of the plant is avoided.

Selection of Seeds is of far more importance than is generally understood. The earliest ripening seeds are, as a rule, the best; and by selecting systematically the earliest and most perfect seeds for a succession of years, superior strains of vegetables may be produced.

Bushel Boxes of some light wood are in some respects more convenient for digging, marketing and storing Potatoes and various root-crops than baskets or barrels. They should be made of uniform size, so as to fit closely together, and if well made, will last a life time. A box measuring inside 16x13x13 holds, when level full, a good, liberal bushel.

Perennial Vegetables, of which Asparagus and Rhubarb are the most prominent representatives, may be planted now to good advantage, provided the ground is in proper condition. Fall-planting of any kinds of plants or trees is not advisable on heavy, wet land, but where the soil is light, and naturally or artificially under-drained, much may be done in this direction to relieve the pressure of spring work.

SULPHUR AGAINST POTATO BUGS.

Last spring when planting Potatoes, Mr. M. A. Barber of Wyoming Co., N. Y., put a teaspoonful of sulphur in each hill of fourteen rows in the middle of the field. The rows were 25 rods long, and were not attacked by bugs at any time, while those immediately along side of them and all those not so treated suffered severely and had to be dusted with Paris green. The varieties were Early Sunrise, Beauty of Hebron and Burbank, and the rows of plants that had the sulphur were decidedly the most vigorous of any in the field.

We are not prepared to offer an explanation of this singular result, but as the experiment is not expensive and is easily made, it is well worth extensive trials.

THE TOMATO.

NOTES ON VARIETIES.

Among the more promising varieties of Tomatoes of recent introduction, the Optimus, introduced I believe the present season by Messrs. Ferry & Co., will perhaps take the lead. In form and color it resembles Livingston's Favorite, but with us it ripened its first fruit eleven days earlier. It should be remembered, however, that comparative earliness of different varieties of the Tomato is by no means constant. Plants moderately vigorous, with deep green foliage, fruit borne in clusters of two to four each, distinctly flattened, remarkably smooth and regular in form; bright scarlet; two-and-a-half to three inches in diameter; basin (hollow at the blossom end) very small, or oftener entirely wanting; cavity (hollow about the stem) shallow and scarcely furrowed; cells, three to six. The flesh is firm and of excellent quality.

The Emery (Farquhar) is of rather more vigorous growth, and a little larger in size than the Optimus. In form it is rather less regular; in season about two weeks later.

The Fulton Market of Tillinghast, which seems to be the same as the Essex Round Red Smooth of Gregory, is a vigorous growing variety, with roundish or slightly flattened, very smooth and regular, bright scarlet fruit, two to two-and-a-half inches in diameter; basin very small or wanting, cavity shallow, very little furrowed; cells two to five, flesh firm and of good quality; ripened a week earlier than Optimus.

Early Richmond (Landreth) in our test, bore fruits too much furrowed and too irregular in form to make a desirable variety. In season about the same as the last.

King Humbert. I have been much interested in this variety, because it seems to offer a new type of fruit. So far as I know, this is the first strictly two-celled red Tomato that has been sufficiently large for table use. The two-celled Tomatoes are invariably smooth, and are usually earlier than the many-celled varieties, facts that should not be forgotten by the growers of new varieties of this vegetable.

The plant of the King Humbert is very vigorous and productive. The fruit is oval, slightly flattened longitudinally, and thickish towards the blossom end; very smooth; with neither cavity nor basin, bright scarlet, about one-and-three-fourths inches in longest diameter, and two-and-a-half inches through the axis; borne in clusters of from five to nine. The flesh is remarkably thick and firm; so firm indeed, that fruits picked and placed in a dry room will shrivel like an Apple before decaying.

The French Upright or Tree Tomato, Tomato-de-Laye of the French, possesses one character that if combined with earliness would make it extremely valuable. It is upright in habit and usually so strong as to be self-supporting. The fruit is of good quality but so late that it is scarcely worth growing in this climate. Could an early variety with the habit of the Tree Tomato be secured, it would be adapted to culture in frames, and thus would be extremely valuable. We are working in this direction and have growing several hundred plants from the French Upright fertilized with the Acme, Livingston's Favorite and Alpha Tomatoes. Some of these seedlings promise to be at least as early as many of the varieties of the common Tomato.

The Rochester Tomato introduced in 1883 by Messrs. Sibley & Co., bears a few remarkably fine fruits, but unfortunately the majority are quite mal-formed. With us, it rots badly.

Some strains of the Mayflower retain the original good quality of this variety, while others have much degenerated. It is possible that this and the Rochester were sent out prematurely. I find in my experience that it takes at least four generations to fix the character of a Tomato secured by crossing.

The Trophy as grown by us through four years, from seed of our own saving, is evidently deteriorating in quality. How much if any of this retrogression is due to cross-fertilization, I do not know. As the fruits of the Tomato vary so much on the same plant it is very difficult to understand how many distinct varieties we have. It is probable, however, that our list of catalogue names may be considerably reduced.

"ELM."

New York Agricultural Experiment Station.

MANURING IN DRY SEASONS.

How to guard against the evil effects of drought as much as possible, is always one of the leading questions with the gardener and farmer, and the following incident may prove suggestive to some readers of THE AMERICAN GARDEN.

Last year a piece of ground that had been quite liberally enriched with commercial fertilizers yielded but a moderate crop of Dwarf Beans, while an adjoining piece of ground to which manure from the horse-stable had been applied, produced a remarkably good crop of the same kind of Beans. The inference from this was that in the first instance the drought prevented the full action of the fertilizer, which had only been harrowed in on the surface, while in the other piece the stable manure retained sufficient moisture and furnished nourishment for the crop. Taking this as a hint I adopted the following plan.

After plowing and harrowing my ground, I made deep furrows across the field at a distance of five feet from each other. Into these I deposited stable manure to the amount of 12 or 14 loads to the acre. This manure was covered by a light, single-horse plow throwing a furrow on it from each side. On the intervals between the ridges I scattered superphosphate. Then I planted in the shallow furrows each side of the ridges, having still space enough between the ridges for the horse and cultivator.

On an acre and a half the work of plowing, manuring and ridging was done last fall, and as soon as the ground would do to work this spring, I used Mapes soil-lifter in

the shallow furrows, not putting on the superphosphate till this spring, and opening the furrows again with a light plow. In this way, with comparatively little labor this spring, I have planted early Peas on one side of the ridges containing the manure, and early Potatoes on the other side. The advantages that I am hoping to secure are:

1. The roots of whatever is planted along the ridges will be at liberty to extend into and under the yard manure, where they will find both moisture and richness in a dry time if it is anywhere. The manure covered with soil serves as a mulch and nourishment.

2. The concentrated fertilizer is as available as ever on the other side of the plants where the cultivator runs.

3. This method gives opportunity for closer planting—the rows averaging two-and-a-half feet apart, two of them being nearer together with a narrow ridge between. If it is not desirable to have them so near the crops can be put in hills farther apart in the rows.

It may be objected to this method that it involves more hard labor in keeping the weeds down on the ridges that the cultivator cannot reach. This is certainly a valid objection where the ground is full of weed seed, and in such cases I would not recommend this method.

Civilization has many conveniences that would be utterly out of place and impossible in savage society. Just so there are many advantageous methods that can be practiced where land is civilized and free from the barbarism of weeds.

I would not question Peter Henderson's wisdom in recommending 75 loads of yard manure to the acre in his circumstances. It is simply a question of what is wise investment. Where manure and labor are abundant, no doubt these are the things to invest in if markets will warrant. But farmers cannot always invest in that way, and with many who have already invested largely in land the problem is, how to make a moderate quantity of manure go the farthest on a large area of land, and it is towards the solution of this problem that I offer the above observations. H. J. SEYMOUR.

FIGHTING SQUASH BUGS.

Of the large number of remedies recommended every year for this obstinate pest, far the greater part will, upon trial, be found of no practical value whatever. In spite of the so-called remedies the bugs will come, and your crop will be lost if you place your dependence in untried remedies.

If one is diligent and careful enough to destroy the first crop of bugs and their eggs from the start he may often save his vines, but no half measures will do. I tried planting between rows of Potatoes as recommended, but while the Perfect Gem was not troubled, the Hubbard and Boston Marrow were entirely destroyed by bugs. I have used ashes, lime, soot, salt, coal-oil, saltpetre, in various ways, with the object of finding out the specific, but whenever plants were saved it seemed only accidentally, as others so treated did not escape.

The only remedy that has proved effective with me so far is "Slug Shot," if properly applied. It must be dusted on the vines every few days, while the dew is on, and after every heavy shower that washes it away, else it cannot furnish protection.

An experiment was also made in planting seed two weeks after the main crop, with a view to determine whether the bugs prefer the young and tender growth to the older. Another with covering different parts of the stems to induce more root growth and produce proportionate resistance, but all to no avail. I might have saved many of these vines by careful hand-picking, but as I wished to give each remedy an equal trial I had to

A BUNCH OF CHICORY.

sacrifice a good many vines. If anyone has an infallible remedy I wish he would let the readers of THE AMERICAN GARDEN know it.

N. J. SHEPHERD.

TWO LITTLE KNOWN VEGETABLES.

SORREL

Is used for soups and stews and as a flavoring element in other dishes. The small, shiny seeds, shaped like a grain of Buckwheat, are produced upon tall stalks like the Yellow Dock, which the plant somewhat resembles, having a broad, tender, light-green leaf. The leaves, gathered in sufficient quantity, and dropped in boiling water with salt for a few minutes, will make a dish of "sour greens" without the addition of vinegar.

LARGER LEAVED FRENCH SORREL.

The seed of the large-leaved French Sorrel planted in the spring, will continue to grow in the soil for years, will endure the shade and neglect, and can be cut for salad as often as wanted; is perfectly hardy, and can be transplanted with ease.

CHICORY.

Sow the seed early in the spring in rows 15 inches apart, as it has a broad, branching top. This plant is distinct from Endive; in the Chicory the root is the most valuable part, and in the Endive the top is eaten; but they are so near related that the top of the Chicory can be blanched and eaten also, while the Endive root may be used like Chicory. Its cultivation is similar to that of Carrots, and it may remain in the ground over winter like the Parsnip, without injury. It is largely used as a cheap substitute for Coffee, by scraping, slicing, drying, browning, grinding and mixing with the Coffee. The root is also boiled and prepared for the table, making a palatable dish. I have not tried it after the second season when it goes to seed, though it would seem to be equally as good. The seed stalks resemble Lettuce in manner of growth, but the flowers are more scattered among the branches and are of a most beautiful blue color. In form they resemble the Dandelion, but are much smaller and spring from the axils of the leaf. All parts of the plant have a milky juice.

Where there is a demand it may be grown with considerable profit, but except in the largest cities the market for it is too uncertain and irregular to warrant its cultivation other than as an experiment.

W. H. BULL.

HOW TO TELL A RIPE MELON.

The rinds of Melons when left on the vines to mature, generally become hard and the pulp brittle, and when, under pressure, you hear the inside crack or give way it may be regarded as a sure sign that the Melon is ripe, and has matured well on the vine.

If a melon remains on the vine until properly matured the side that lays on the ground will be found to have changed from white to a pale yellow, and upon close examination numerous small pimples will be noticed on the surface, particularly on the outer edge. These pimples never appear on those that are not ripe or have been prematurely pulled.

Sometimes the desirable pale yellow color is produced prematurely by turning this part of the Melon to the sun for a day or two, but the yellow thus produced is of much deeper shade. This in connection with the absence of pimples will readily tell the experienced eye how the color was produced.

If the skin will readily peel, leaving a hard, shelly appearance, it is a good indication that a Melon is ripe; and also if it has a dull brown appearance. All these signs are rarely seen at the same time, but the presence of any *one* is sufficient to indicate the ripeness of a Melon.

THOS. D. BAIRD.

FRESH SPROUTS.

Labor is the chief expense in the garden, so it is a great gain to be able to grow good Celery without the laborious trench and banking so long thought necessary.

In our Potato field of eight acres on light, sandy loam, a ton of fertilizer per acre, Pearl of Savoy was the best early sort, Early Rose next, and Vick's Extra Early was a failure. The seed of the two first was first-class, of the last, small and poor.

The Acme Tomato has been more exempt from disease this summer than for several seasons. Last year it rotted so badly with us that we were about to discard it altogether, but it is redeeming itself bravely now. Does season make the difference?

Fruits.

SEASONABLE HINTS.

Fall-Planting.—The question of the advantages of autumn-planting over spring-planting presents itself to many of our readers at this season. With the skillful and careful planter this is merely a matter of expediency. His trees will grow, planted at almost any time, but as at this season there is not so much pressing work, many orchardists prefer fall to spring-planting of trees, vines and plants.

If the ground has been devoted to some hoed crop during summer, it is now in the very best condition for tree planting, and the sooner after the leaves have fallen, the trees are taken up and transplanted, the better. In fact it is a common practice in nurseries to strip the leaves from the trees in order to prepare them for earlier planting, and although this may seem an unnatural proceedure, it works well in practice, and is really not more unnatural than pruning roots and branches, or transplanting itself.

In fall-planting great care should be exercised to have the soil come in direct contact with every part of the roots, and to pack it well around every part of them. All the branches should be shortened in at the time of planting, and not allowed to remain till spring, offering additional surface for evaporation.

Planting Nuts.—Most nuts will not sprout after they have become thoroughly dry, and should therefore be planted as soon as ripe. If the ground is in proper condition the best plan is to plant the nuts just where the trees are wanted. A mellow, moderately rich soil, covering the nuts two to three inches deep, and packing the earth firmly over them, is all that is needed.

If it is not practicable to plant in the fall, or where squirrels and field mice abound, which are very apt to steal the nuts, it is better to defer planting till spring. In this case the nuts have to be kept in sand over winter.

To preserve the nuts over winter take a box,—which should not be water tight,—cover the bottom with about three inches of fine sand, spread a layer of nuts over it, cover with sand, and so on, finishing off with a three-inch covering of sand; place out doors and cover with soil. In spring, as early as possible, plant in nursery rows, or in the places where the trees are to remain permanently.

Keeping Grapes.—Only tough, leathery-skinned varieties can be preserved in good condition till winter. It is throwing away time and Grapes to attempt keeping Concords and other varieties with thin skins. Bunches intended for keeping should be gathered when perfectly dry, and handled with utmost care so as not to bruise the berries, wrapped in clean, soft paper, and placed in shallow boxes. The storage room should be dry, and as cool as possible without actual freezing.

STRAWBERRY CULTURE IN CENTRAL NEW YORK.

The most successful growers prefer a good Clover sod, plow it under in the fall, and replow in spring, with but little or no manure. The ground is then thoroughly harrowed and marked out in rows four feet apart. Planting is done with a trowel, the plants being set nine inches apart in the rows, a man planting about 4000 plants—after being trimmed—in a day.

After the plants are set, and before the weeds get a good start, we go twice through a row with a Corn plow and give the plants a thorough but shallow hoeing. In the course of two weeks we repeat the operation, using a cultivator instead of a plow, and again hoe. Plowing and cultivating are then alternated every two weeks from the 1st of June to the 1st of August and as much later as the growth will permit without injury to the young plants; the cleaner they are kept the better. If the season should be favorable, by the last of October the rows will have grown together; then, when cold weather sets in, and the ground remains frozen, we cover with Rye Straw, Hemlock boughs or Potato vines.

As soon as danger of severe freezing is past in spring we take off the covering, and plants are dug from between the rows to set another piece. We then go once through between the rows with a Corn plow to mark them out for picking. Nothing more is done to them but to pick and market the crop. The patch is allowed to fruit another season without giving it any care or protection in winter. We then plow under and sow to Buckwheat or fodder Corn; if to Buckwheat, it is plowed under green in the fall and sowed to Rye, and seeded down in grass and Clover. After a year or two it is ready for another planting of berries. Our soil is a gravelly loam with a great many paving stones.

The varieties grown are mostly Wilson and a few Sharpless; of the first we raise about as many bushels per acre as we do of Potatoes. The crop was good this year, prices averaging about six cents per quart.

J. JEANNIN, JR.

THE BLIGHT OF THE PEAR.

Professor Arthur of the New York Experimental Station reports some very interesting investigations upon Pear Blight. The readers of THE AMERICAN GARDEN have already been made acquainted with the theory of the blight in Pear and Apple trees as advanced by Professor Burrill in 1877. Through a long series of microscopic investigations he was convinced that the cause of the blight was due to the presence of minute organisms known as bacteria.

These bacteria are single-celled plants belonging to the order of fungi to which the various moulds, rusts, smuts, toadstools, etc., belong. On account of their smallness bacteria have escaped the notice of all except those who are experts with the higher powers of the compound microscope. Bacteria may be seen by the naked eye *en masse* when they are in large numbers. They develop in all putrifying substances and are now considered as the primary cause of putrefaction. A clear liquid capable of putrefaction may be kept free from decomposition by excluding these germs. The process of canning meats, fruits, etc., is simply one by which the germs of bacteria are killed in the material by high temperature, and afterwards sealed so that germs cannot enter the cans. The germ theory of disease in animals is based upon the destructive attacks of bacteria. These minute organisms find their way to the animal and if the conditions are favorable the attack is vigorous and death may result. Thus anthrax or splenic fever in cattle is now known to be a well-established case of bacteria disease. The germs can be found in a sick animal. They may be propagated outside of the animal in a glass vessel and afterward introduced into a healthy animal, and in a short time will produce the same disease as was manifest in the first animal. The list of maladies, many of which are most to be dreaded because most contagious, belong to the germ diseases. Some authorities are firm in the belief that all contagious diseases are due to bacteria.

At first thought it may seem to many that this cannot be true. In what better way can the ordinary facts of everyday observation concerning contagious diseases be explained? If a person is exposed to a "catching" disease to what is he exposed? Is it not easiest to think that there are minute germs given off by the sick individual which coming in contact with the well person develop sickness? Why cleanse a room after it has been occupied by a sick person unless to remove the last germ that may be adhering to the wall or other part? Those who know that the germs do exist and in countless numbers, do not need any such argument to convince them. It is to the great mass of people who cannot study these subjects that such thoughts need to be presented.

If the reader can accept the germ theory of disease as illustrated in various fevers, cholera, diphtheria, etc., he is in a position to consider the advanced views regarding the Pear blight. Professor Burrill has proved to his own mind and to many others that this strange disease appearing so suddenly and destructively in the orchard is the result of countless bacteria preying upon the vital juices of the plants. Professor Arthur has taken up the same subject and verified the observations and experiments of Professor Burrill. He found that the disease could be transferred from one tree to another by careful inoculation.

The best results were obtained in the more thrifty parts when growth was rapid. The fruit as well as the leaf and stems were inoculated—those most succulent "taking" the most violent form. Professor Arthur verifies Professor Burrill's conclusion that the blights of the Pear, Apple and Quince are identical. He also found that the June-berry and Thorn were susceptible. Failures to inoculate resulted with the Mountain Ash, Raspberry and Grapes. Professor Arthur thinks it is possible that the trouble is caused by a poisonous principle residing in the fluid surrounding the bacteria or in the dead juices of the plant. It has not been shown that this fluid without the germs will convey the disease or that the bacteria without this fluid will inoculate. The germ theory is not therefore fully proved but so nearly as to be a subject for belief.

Very little that is new regarding remedies is offered. The destruction of all affected parts at the first indications of blight is recommended. Cut off all diseased parts and burn them. It does not seem probable that chemicals applied to the soil will effect any change.

DR. BYRON D. HALSTED.

THE HUCKLEBERRY AND CRANBERRY TRADE.

In the sale of no other kind of fruit is there so much deception practiced as in that of Huckleberries and Cranberries, as there is no standard measure by which the sale can be regulated. In Massachusetts the law requires a bushel to be a thirty-two-quart measure level full, yet as no definite dimensions for such a measure are required, the consequence is that the bushel boxes seen in the markets differ several quarts in their contents.

Some years ago the New Jersey Cranberry-growers' Association had a law passed in which the number of cubic inches a bushel of Cranberries should contain was specified. A New Jersey Standard box contains 2211 cubic inches, a trifle more than the legal standard bushel, which is 2150.42 cubic inches. But unfortunately this law is of little benefit to the growers of the State, for so soon as the packages reach New York, unscrupulous dealers repack the berries into so-called "skin" boxes, which contain from four to seven quarts less than a bushel. A difference of one inch in the width of a standard box will hardly be noticed by the casual buyer, while it will make a difference of four quarts in its contents.

When Huckleberries were first marketed in large quantities, dealers had established regular shipping boxes containing eight and sixteen quarts, but their size did gradually shrink in such a degree that they are hardly recognizable any more. It would be to the material benefit of both growers and honorable dealers if a national standard measure could be adopted for the sale of not only these, but all kinds of fruits and country produce.

C. W. IDELL.

POPULAR GRAPES.

Although no one is ready to drop any of our popular fruits from cultivation and all are enjoyed in their season, it would seem that in none are embodied a greater combination of good and valuable qualities than in the Grape, and if any were to be spared it surely would not be this noble fruit. Comparatively few people realize how easily Grapes may be kept so that a table supply may be at hand through all the winter months.

The Concord is still held in high esteem by many, although we have varieties that in point of flavor are much in advance of it.

Moore's Early, although but a slight improvement in quality, has filled a really long-felt want for a *reliable early* black Grape. It ripens nearly or quite two weeks before the Concord, the berry is larger and in this locality the bunch averages as large, although I believe this latter point is not generally conceded for it.

The Worden is gaining in favor after standing before the public for several years, but after all does not seem to be much of an improvement on its parent the Concord, which it closely resembles.

Much is claimed for the Early Victor. Though not quite so early as Moore's, it has thus far proven iron-clad so far as mildew is concerned. The quality is good, not extra.

We are promised a fine early variety in the Jessica of Canadian origin. The introducer is candid in admitting that it has shown an inclination to mildew. This should not deter anyone from trying it, however, as it may redeem its character in different localities.

Wonderful claims are made for the Niagara. The introducer of the Jessica, and other fruit growers are authority for stating that in some instances it has mildewed and rotted badly. It is to be hoped, however, that these faults will not prove generally troublesome, as in other respects it possesses highly valuable qualities. It is now being widely disseminated, so that its true character will soon become established. W. H. RAND.

CRANBERRIES ON SANDY LAND.

As a suggestive instance of successful Cranberry culture contrary to the general opinion that Cranberries can only be grown on swampy soil—and also of the great advantages of sub-irrigation, Prof. J. L. Budd mentions, in the N. Y. Tribune, the cranberry fields of Mr. O. J. Stillwell, near Sparta, Wis.

The plantation of eight acres, says the professor, is on a level tract of sand, which fifteen years ago was used as a cornfield. The thin deposit of black soil on the surface soon leached into the sand-bed below, leaving a barren sand waste. As the damming of a spring-run near by would permit turning water into ditches running through and across the deserted cornfield, Mr. Stillwell conceived the idea of planting the tract to Cranberries. In the way of trial the water was first turned into ditches about two feet in depth and eight rods apart—both ways—excavated around and across about one acre of the sandy tract. This trial-plot soon astonished owner and visitors with its exhibit of luxurious vines and great crops of perfect fruit. From this trial-acre, and from other acres since established, an annual yield of 400 bushels of far more perfect fruit than is gathered from the marshes has been harvested. Truly are the "eight acres enough," as Mr. Stillwell enjoys as many of life's luxuries from his little patch as the owners of many large farms.

The sub-irrigating ditches are not over two feet in depth, and the water feebly flowing in them is not over six inches deep, and in parts not three inches. The ditches are never filled except in early spring and in the fall, when danger of frosts—to injure blossoms or fruit—is apprehended. At such times the field can be flooded in about three hours. During the growth of the great crop of fruit the land is as firm and dry on the surface as a cornfield. The supply of water to the roots is from the saturated sand underneath at the level of the water in the ditches. Above this level the moisture rises by capillary attraction, supplying needed moisture *in the natural way*. The wonder expressed by all visitors is that such continued crops of even, perfect fruit can be obtained without fertilizers on a sand waste too poor to grow white Beans.

THE SWAMP HUCKLEBERRY.

EARLY-BEARING FRUIT TREES.

It is not necessary to wait long for fruit trees to bear, says J. J. Thomas, if early bearers are selected and good cultivation is given them. To adduce instances: In a single garden, Apple trees, the fifth year from setting out, yielded a bushel each; Peach trees, the third summer, bore three peeks; a Bartlett Pear tree gave a peck of superb fruit in two years: although in all these and other equally successful instances the treatment was not better than that which every good farmer gives to his Carrots and Potatoes and other field crops.

SHORT CUTTINGS.

The Strawberry weevil threatens to become a serious obstacle in Strawberry culture. It feeds upon the blossoms in the manner of the Rose beetle. This year its ravages were especially disastrous on Staten Island.

It is stated that in France it is customary to cut off the flower-stalks of Strawberries as they come into bloom, in consequence of which the plants are said to bear a month later. Plants don't behave this way in our country. Cutting off the flowers throws the strength into leaf growth and the production of runners.

It is a notable fact that fruit growers who cultivate but a few acres, usually reap the largest rewards as compared with the extent of their efforts. This, Chas. A. Green thinks, is owing to the fact that they can select the choicest ground, make it exceedingly rich, and give it the best cultivation and protection; whereas large cultivators are compelled to take average land, usually fertilize it sparingly, and cultivate it as they may be able.

THE CAUSES OF FRUIT-RIPENING.

That great traveller and observer of Nature, Alexander von Humboldt, draws attention to the fact that he found the most delicious fruits at Astrakhan, Tobolsk, and other places in the interior of the Asiatic continent which have an average annual temperature of 48°. This he says is also the average temperature of Ireland and the coast of Normandy, places where the summer barely suffices to bring Apples to maturity, though it permits the growth of so tender a tree as the Myrtle.

To explain this difference Humboldt admits that Ireland and Normandy have the cooler summers, as well as warmer winters, of a coast climate; but he would rather attribute the impeded ripening of fruit in those places to the absence, not of warmth, but of direct sunlight. Two climates may be equally warm, of which one, through prevalent cloudiness, will afford far less sunlight to vegetation; and, he remarks in conclusion, direct sunlight plays a very important part in the maturing of fruits, as the future of agriculture will show.

Humboldt's view is borne out by observation. Some of the celebrated Californian fruit valleys have a summer temperature less intense than ours of New England: but the sunlight pours down from the cloudless sky with steady force, from May to October, losing not a day. I have passed a season without one uncomfortable hour of heat in such a valley, where the landscape showed endless orchards of ripening Peaches, Pears, Figs, Olives, Apricots, Almonds and Nectarines. Other valleys are less temperate.

The experience of wine-makers reveals a similar truth. The vintage of '75 in France was poor in quality: yet in that year the average summer temperature stood high. But it was a season deficient in sunlight, as shown by the actinometer—an instrument for measuring the direct heat of the sun.

Pasteur, the French scientist, who has successfully investigated the causes of cattle disease, was struck by this fact, and attempted to explain it by exposing raw wine in glass jars to direct sunlight, keeping other similar jars in ordinary light for the purpose of comparison. The effect of the sunlight was very manifest. In the exposed jars the acids of the raw wine decreased by oxidation, rapidly improving the quality of the wine; while the other jars showed no change.

It is a reasonable inference from this, that the same process occurs in ripening Grapes and other fruits exposed to sunshine. The direct sunlight causes the acids of the green fruit to combine with oxygen and so disappear, and the fruit thus loses its acidity, at the same time that it is being supplied with sugar from the general food-stores of the plant,—the whole process constituting what we call "ripening." Whether the sunlight is as essential to the increase of sweetness as to the decrease of acidity, is uncertain; though it has been shown that a detached bunch of Grapes will contain more sugar if exposed to the sun for some time. Pears, we know, ripen in a closet.

The above facts show that two studies have great importance for agriculture: first, the study of the effect of direct sunlight on vegetation; second, the study of the distribution of sunlight in various climates. The last problem cannot be very difficult,—"When the sun shines, it shines; when it doesn't, it doesn't," someone exclaims. Unfortunately the question is not so simple. Not only do clouds intercept sunshine, but watery vapor in the air—when to the eye the sun seems as bright as ever—can absorb a large quantity of the effective sun rays, and so retard fruit ripening. Hence, an apparently sunny country which has much invisible watery vapor in the air, owing perhaps to a near-lying ocean, will prove defective in fruit-ripening qualities.

This is a further explanation of the fruit-ripening power of the Californian summer; for it is a summer characterized by very dry air. This presence of watery vapor can be revealed only by certain specially constructed instruments; and the French government has thought the subject of sufficient importance to warrant establishing a station for experiments with these instruments.

There is, indeed, one fact in the distribution of sunshine over the earth's surface that seems paradoxical. The farther north we go the *more* heat does a given area of land receive in a summer's day from the sun.

This is because the summer day lasts 12 hours at the equator, and longer and longer as we go north, until arriving at very high latitudes there is no sunset. Why then the colder northern climate? Because the winter day is as short as the summer day is long; and through the winter vast masses of snow and ice accumulate and chill the whole year. Yet the fact remains, that an acre of Wheat receives more of direct sunlight in a summer's day in Ohio, than in Mexico, and more in Canada than in Ohio. It is also known that Wheat matures in fewer days in Canada than in Ohio, and in Ohio than in Mexico. This shows the influence of sunlight in ripening grain and fruits.

XENOS CLARK.

REVIEW OF THE BERRY MARKET.

Out-door grown Strawberries are offered in the New York markets for about eight months in the year, and during the greater part of this period, in almost unlimited supply. The aggregate quantity received this season was not as large as that of some former years, nor was the average quality as good as usual, caused by the extreme severity of last winter, which injured many plantations, and also by the severe drouth which prevailed over a large area, at a time when moisture was most needed.

Most of the berries from south of Virginia are forwarded in refrigerators, which adds largely to their cost. The first Strawberries shipped in the ordinary way of transportation are generally received from Virginia, but this year Maryland berries were first in the market, and sold for a few days at from 25 to 30 cts. per quart wholesale. With the arrival of larger quantities prices dropped soon to the average standard of 8 to 10 cts. per quart for berries of good quality. Notwithstanding the shortness of the crop, prices ruled uniformly low, which a temporary scarcity for a day or two failed to improve.

Many fine berries are now raised on Staten Island and in Essex Co., N. J., the nearness to New York enabling the growers to bring their fruit to the market the same day it is picked, and, consequently, to receive remunerative prices. The crops from the Hudson River counties, although a light one—with the exception of the Catskill district—did not bring as high prices as the small supply should have led to suppose. Western N. Y. berries were of good, medium size, firm and bright, and as a whole sold better than any other.

The experiment to ship Strawberries from Tennessee to New York, in refrigerator cars, which was tried this year for the first time, did not prove a success. The transit required four days, and many of the berries presented a singular appearance upon arrival. Berries that had been bruised or otherwise injured in the picking and handling had evidently commenced and continued to decay until the intense cold in the car arrested decomposition. Thus the other part of the berry remained perfectly sound and almost completely separated from the decayed portion, but the appearance it did not improve much.

With the introduction of the Sharpless a few years ago there sprang up a sudden demand for very large berries; this season, however, a decided reaction from this preference made itself felt, and growers will find that the coming demand will be, not for monstrosities, but for medium-sized, firm, bright berries of fair quality. Extra fine quality—strange as it may appear—adds but little to the market value of a berry.

Not less than two-thirds of all the berries that came to the market were below medium, and most of them very far below, too. These have generally to be sacrificed at any price the purchaser may offer, to the serious injury of better grades.

HARDINESS OF FRUITS.

I am considerably interested in the hardiness of fruits. Therefore I often ask myself by what process does a variety become hardy and how is it that we expect hardiness in a variety originated north, and do not expect it in a variety originated south. I gain an insight into this subject by considering the similarity between plants and animals. Should I ask you to specify the distinctive difference between the animal and vegetable kingdoms, you would doubtless be puzzled in answering, for there are no functions of animal life differing from the functions of the plant life sufficiently to define definitely the dividing line.

The question of a digestive apparatus does not distinguish animals from plants, as some animals appear to have no digestive apparatus while plants and trees may in a certain sense be said to digest that which nourishes them; neither can the difference between animals and plants be established on the grounds that plants, vines and trees only can be propagated by cuttings, buds and scions, for there are animals that can be cut in pieces, each of which develops into a perfectly formed animal. It has been thought that the distinguishing feature is instinct. It may be that plants and trees are not possessed with instinct, but if they are not, what shall we say of the impulse that leads the vine to throw out its tendrils in the direction of a support, and twine itself about it with the greatest tenacity? Or what shall we say of the roots of a vine that pushes out a long distance in the direction of a supply of food in the shape of a manure heap, or for a

supply of water far beneath it, or to one side? Or what shall we say of a vine planted in a dark cellar which escapes from its prison and rears its head with pride into the sunshine above? If these are not evidences of instinct what shall we call them?

That plants have peculiarities similar to those of animals is apparent from the fact that there are organisms which scientific men are unable to determine whether they are plants or animals. The similarity between the habits of plants and animals teaches me that we may be aided in arriving at conclusions relating to the hardiness of fruits, by considering how animals are improved and made more hardy, also to improvement in other ways, and to treatment of diseases, as we have better physicians for animal than vegetable disorders. Therefore in answer to the question, "Where do the plants come from that are found in the north, and how came they possessed with hardiness?" I ask of whence came man and the beasts from such northern lands, and by what process did they become possessed with hardiness?

The birthplace of man and most animals was in a mild clime. Their march northward has been by slow stages, occupying many thousand years, during which they have accumulated and inherited hardiness enough to withstand the climate of the arctic regions. The birthplace of the majority of fruits was likewise in a mild climate, from whence they have migrated throughout the ages. While plants are deprived of the peculiar methods of locomotion possessed by animals, they make free use of others' wings and legs, and of lakes and streams.

The seeds of fruits will usually remain in the stomachs of birds and beasts several days and finally be deposited several hundred miles distant from their birthplace without loss of vitality. Plants have thus and by other methods migrated north and south. Those plants best adapted to a northern clime that rove south, perish under the scorching sun of the tropics, but such as migrate north become more hardy as they progress northward. The gradual increased exposure is met by the response invariably given by plants and animals when placed in a perilous position, which is to fortify themselves against disaster. Thus the parent accumulates hardiness by gradually increased exposure. The offspring inherits the hardiness of the parent and acquires more hardiness from further exposure, until in the course of ages the hardest varieties are obtained by natural processes.

This natural process is too slow for short-lived man, who seeks to hasten it by long leaps. Instead of occupying ages to remove a seedling from New Jersey to Minnesota, he transports it by express at the rate of 40 miles an hour. The change of climate is too sudden and violent, and the result is that, like many other good things, the petted variety dies young.

Man seeks with more wisdom to import a variety to our northland that through long generations of gradually increased exposure has become hardy in foreign climes. While this meets with partial success we must remember that the inherited peculiarities of such imported varieties are not such as varieties inherit on our own soil. Therefore from our native stock must we look for our best success.—*C. A. Green before the American Pomological Society.*

FRESH FRUITS ALL THE YEAR.

People at the East know very little about the luxury of gathering fresh fruits from their own grounds every month of the year, says C. H. Lathrop in the Rural Californian, and they will hardly believe that we are able to do it even in sunny California. But let us look at the matter a moment, and see if we cannot convince the most skeptical by giving a few simple facts which can be vouched for by everybody who has spent a year or two in this favored clime.

Let us commence with January, and we find our Orange, Lemon and Lime trees, laden with their golden fruits; during February and March the same tempting fruits are abundant; and in the latter part of March and during April and May we can add the luscious Strawberry, in great profusion, to the list; in June we have Apricots and the earliest Peaches; in July and August, Apricots, Nectarines, Peaches and Blackberries; in September and October, Peaches, Pears, Apples, Plums, Almonds, Figs and Grapes; in November, Peaches, Apples, Pears, Persimmons, Olives, Grapes and English Walnuts; in December, Apples, Pears, the latest Peaches, a few Grapes; and by this time the Oranges are fit to eat again.

Other varieties of fruits might be added, but enough have been mentioned to show your readers that there is not a time during the whole year when the average Californian who has taken the pains and foresight to plant the proper varieties, cannot supply his table with the most wholesome of all human food, fresh, ripe fruits. And we can just as truly say that there is not a time during the whole year when beautiful Roses and flowers of various kinds cannot be found blooming out-of-doors and filling the air with their sweet perfume, even when the mountain tops a few miles distant are covered with their snowy mantle.

PRACTICE WITH SCIENCE.

It has been impossible until within a few years for a youth to obtain in this country any practical education in horticulture except by a sort of apprenticeship to a practical gardener. In England the Kew gardens have served as training schools for some of the best gardeners. In France the horticultural school at Versailles has turned out several generations of skilled horticulturists, and Europe has quite a number of other successful schools. Now some of our agricultural colleges have developed their horticultural departments in the direction of a practical application of the class-room teaching. On a recent visit to Amherst I was greatly pleased to note the improvements in practical horticulture at the Massachusetts Agricultural College. Prof. Maynard, short of funds for his department, was forced to enter the market as a nurseryman and fruit grower. The result has been successful in every way. It has been claimed that the College should not and need not make any attempt at commercial success. Let us see.

Prof. Maynard showed us through a four or five-acre vineyard in full bearing, where the leading varieties are grown for business; a Pear, Peach and Plum and Apple orchard that is managed as a wise, successful fruit grower would manage it; a plantation of Raspberries and Blackberries that is made to produce a paying crop by the most approved methods; a big Strawberry field that pays, and a three or four-acre nursery that produces choice trees for sale. The greenhouses and propagating pits turn out thousands of flowering, bedding and vegetable plants that find a ready market. The students do most of the work under competent superintendence, and the lessons of a practical business success in horticulture are ever in action before their eyes, which they must learn by absorption if not from interest. And the fact is that some of the recent graduates have entered into immediate successful competition with gardeners, nurserymen and fruit growers of long experience; whereas in former years the class-room teaching and working among the scientific collections produced men who must still serve several years of apprenticeship with commercial horticulturists. Prof. Maynard's department also includes valuable collections for observation and comparison: named lots of all the small fruits, extensive beds of flowering and ornamental plants and trees, and the large greenhouse collection of choice plants. We congratulate Massachusetts on the success of this school of practical horticulture. E. H. L.

A Cherry tree at Chico, Cal., is said to have yielded 1700 pounds of fruit.

The Kieffer Pear does not sustain its reputation for freedom from blight.

It is said that the grasshopper has proportionally 120 times the kicking power of a man. A poor young grasshopper never goes to see a rich Miss Grasshopper when old man Grasshopper objects.

Thirty-five pounds whale-oil soap and four gallons coal-oil to one hundred gallons of water is recommended by the California Horticultural Commission as the most effective insecticide.

Consul Griffin says in his report that the demand for American fruits in Australasia has increased to such an extent within the last few years that it is now very much in excess of the supply.

Irrigation can never take the place of cultivation, and western fruit growers are rapidly finding out that to make fruit growing profitable their land needs more cultivation and irrigation.

"Sam, you are not honest. Why did you put all the good Peaches on the top of the measure, and the little ones below?" "Same reason, sah, dat makes de front of your house marble and the back gate chiefly slop bar'l, sah."

The Charles Downing is the most popular Strawberry in the Boston Market, said a prominent dealer. It is of fine quality, desirable size, good color and a fair keeper. For all purposes it seems to best suit the popular demand.

Flowers.

SUMMER FRIENDS.

Written for The American Garden.

BY E. A. MATTIERS.

The birds have gone, all gone away,
And never said "good bye;"
It makes me feel so sad to-day
That I could almost cry.

When did they go, at morn or night?
And were they all together?
The wren, and robin, bluebirds bright,
And birds of every feather?

Is there some sign the birds all know,
A blossom or a star,
That warns them of the coming snow,
And bids them fly afar?

Oh, Mamma! will they come again,
The very same next year?
"Aye, they will come, in spring's glad train
You'll find them all, my dear.

"There's not a sparrow of the band
Unmarked by God may fall.
Within the hollow of his hand
He holds them, great and small."

OCTOBER IN THE FLOWER GARDEN.

In all horticultural pursuits we have to live in some degree in the future; to-day we have to plant for pleasures to be enjoyed six months hence. The beautiful beds of flowers now soon passing away, had to be arranged and planted last spring. So it is all through the year, the work done is for future enjoyments.

HERBACEOUS PLANTS.

Gather all seeds of deserving herbaceous plants, such as Campanulas, Foxgloves, Poppies, Delphiniums, etc., and sow immediately in some well-drained, well-manured border or bed. More and more every year are these hardy perennial and biennial plants being cultivated. In the neighborhood of Boston—that center of Æsthetic Gardening—this summer I saw some of the finest displays of herbaceous plants I ever had the good fortune to behold anywhere.

I do not advise the planting of herbaceous plants in beds where a constant glare of color in flower and foliage is wanted during the summer, but everyone should have a bed or border for just such plants as are hardy, and give a plentiful supply of flowers during their season.

By judicious care in selecting successive kinds, some may be had in blossom from the time the beautiful Snowdrop, *Galanthus nivalis*, and many-colored Crocuses appear on the first approach of spring, until November frosts have nipped the last Phlox and Aster.

CAMPANULAS.

Some kinds of Campanula growing in the Botanic Gardens, Cambridge, and also in the private garden of Miss Dore, Andover, Mass., were most beautiful objects, rivalling even the Gloxinia in color and beauty of form. Mr. Weston, the gardener, says they are of the easiest culture and for some kinds of floral work are remarkably well adapted, enduring for a long time after being cut and producing their flowers in the greatest abundance. By sowing the seeds early in the fall they form large, strong plants for next summer's blooming.

LILIES.

Often the question is asked, "Why is it my Lilies flower so sparingly after being transplanted in a well-manured and otherwise well-cared-for bed in the fall?"

Just because they were not planted early enough in the fall! All Lilies that make an autumn growth should be planted not later than the first of October in order that they get sufficient time before the ground freezes to make their necessary amount of growth. This is especially applicable to *Lilium candidum*.

The soil best adapted for Lilies of all kinds is a good, friable loam, having thoroughly incorporated with it a good quantity of rich, decomposed cow-manure. See that it is *well rotted*, as nothing is more injurious to bulbs than fresh manure of any kind coming in contact with them. Also perfect drainage is necessary for their successful growth. When too much water remains in the soil, decay of the bulbs is the result.

Plant the bulbs about six inches deep and have the surface of the bed so rounded that no surface water can remain upon it. Before hard frosts are felt give the bed a good covering with manure or leaves; this greatly helps in making them start stronger in the spring and produce flowers more profusely.

SPRING FLOWERS.

For early spring-flowering sow seeds of *Phlox Drummondii*, Pansy, Double Daisy and Forget-me-not. Sow in a sheltered spot where they can be watered and shaded until large enough to have a good start. The smallness of the seeds of the Daisy and Forget-me-not requires to have the soil raked very fine and then sown on the surface and but slightly covered. Sow thin enough to allow the plants room to get a good size before frost sets in.

It is the better way to let them remain in the seed bed over winter; then just as soon as the frost gets out of the ground, plant where they are to flower, giving good, rich soil and a dry position.

They all require winter protection of some kind which has to be put on with caution. With too much of it, or if it lie too close on the plants, they are apt to be smothered. Have some material which shall shelter them from the cold winds and the direct rays of the sun, but sufficiently porous to allow a free circulation of air around the plants.

DAHLIAS.

Examine all the Dahlias and see that each plant is properly labelled. Nothing is more annoying than when spring comes, and time for propagation arrives, to find the Dahlias all mixed up without a label to designate one kind from another. **

THE AGERATUM.

The Ageratum is a Mexican flower. It is not a *showy* plant, but it is a very beautiful one, for all that, and any lover of real beauty will prize it much more than he will many of the more brilliant garden favorites. The flowers are made up of fine, thread-like petals, which gives it a brush-like appearance. They are borne in compact clusters, and are very freely produced all through the season. It is much used by florists in cut-flower work, and in the garden it is one of our best plants for use as a border for beds, especially the dwarf varieties.

A. Mexicanum, the best known variety, is a rich blue in color. It grows to the height of a foot, and branches freely.

Tom Thumb is of a lighter blue, so much so as to be almost a lavender. This compact, dwarf-growing kind, producing its flowers on short stems, is the best kind to use for edging beds, the best, indeed, for any use, except where the plant is grown exclusively for bouquet work. It makes a most charming house-plant if care is taken to keep off the red spider. To prevent this, the foliage must be sprinkled, or syringed, daily. As the foliage forms a dense mass, completely covering the surface of the soil in the pot, an ordinary sprinkling will not answer, and I find the most effective way to get plenty of moisture to the under side of leaves, where it is most needed, is to dip the plant in a pail of water. Then you are sure to get to the spider's lurking places, and he will soon vacate them, if this treatment is kept up. Unless you do this, your plants will soon be ruined.

On account of its soft, rich color,—one seldom met with among flowers,—it is very useful for bouquets. The delicate shades combine and harmonize delightfully with almost all other colors, forming a fine contrast, and thus heightening the effect.

A. Sasseauxii is pink, a compact grower, and a good bloomer, but hardly as fine as the two other varieties named.

It is a good plan to start the seed in the house, quite early in the season. For ribbon-gardening, where stripes or masses of solid color are desirable, it is one of the best annual flowers we have. E. E. REXFORD.

FAILURES WITH LILY OF THE VALLEY.

A frequent cause of failure with this charming plant is that the roots are planted too deep. The crowns should be just level with or but very little below the surface of the ground. Another cause of failure is having them too crowded, in which case leaf growth takes the place of flowers. Transplanting or thinning out is the remedy in the latter case. A liberal dressing of yard manure in the fall does them a world of good. It grows almost anywhere in the shade, but usually does not flower till it has become well established. It spreads rapidly, and the roots love to be let alone.

MILLA BIFLORA.

In all descriptions of this beautiful Mexican bulbous plant we have seen, it is stated that "the flowers are in pairs," as also the botanical name would indicate. This is evidently a misnomer, as among many hundreds of plants we have seen this summer, the majority of flower-stalks had more than two, many from five to seven blossoms. This does fortunately not detract from its beauty. It is a charming plant, with pure white flowers of delicate fragrance, and slender, rush-like leaves. The bulbs have to be planted in spring, taken up in autumn before heavy frosts occur, and generally treated similar to Tigridias. When better known this plant will, no doubt, enjoy great popularity.

Tigridias, Tuberoses, Colocasias and all tender bulbs have to be taken up after the first frost. They have to be thoroughly dried and stored in a place not below 40°.

Lily stems, after the flowers have faded, do not present a very attractive appearance, nevertheless they should not be cut off until they are entirely dry, as the foliage assists the bulb in perfecting its maturity.

OUR NATIVE GOODYERAS.

Goodyera pubescens and *G. repens*, popularly known as Rattlesnake Plantain, are the only native species of this pretty genus of Orchidaceous plants. They differ but little from each other, and intermediate forms between the two occur, so that some botanists consider them only varieties of one species. Both are found throughout damp, shady woods of the Northern States, where their beautiful, blue-green, velvety leaves, veined as with silken threads, attract frequent attention. The flowers are small, greenish white, and borne on a one-sided scape varying from six to twelve inches in height; roots thick and fibrous, attached to a somewhat fleshy, creeping rootstock. On account of their strikingly showy leaves the plants are great favorites for florists for hanging-baskets and rockeries. For the accompanying illustration, from Henry Baldwin's Orchids of New England, we are indebted to the publishers, John Wiley & Sons, New York.

GOODYERA PUBESCENS.—G. REPENS.

LILIES.

Lilies are among the oldest inmates of the garden, and our love and admiration are pretty equally divided between them, the Rose, and the Carnation. Our love for other flowers is often fluctuating, but for this triad it is constant and enduring. It is not their beauty alone which fascinates us, but an added and characteristic fragrance, which always holds a place of its own in the memory.

The Lily, it is sometimes said, is easily grown; and this is true when it is placed under proper conditions. These conditions, unhappily, are not always met, and failure is the result. All kinds of Lilies will not grow equally well in the same soil or bed. An intelligent and successful amateur friend, suffering from a craze for Lilies, told me he had spent upwards of a hundred dollars in trying to establish a large bed. He had bought everything advertised, and put them all in a bed made excessively rich with half-rotted manure. More than fifty per cent died. Grouping the kinds in three small beds with different soils, he was more successful.

Lilium candidum, the common White Lily, also called Easter Lily, will grow and flower well in any good garden soil. In the end of a bed, composed of about eighty per cent of sand and twenty per cent leaf mould, they live and grow, and at intervals of a couple of years produce a flower or two about the size of a Daisy. On the contrary, in the same place *L. superbum*, a beautiful native Lily, flowers very well, but does much better in a better soil. *L. candidum* has been much used for forcing for Easter flowers, but is now mostly superseded by *L. longiflorum*.

L. Thunbergianum and its varieties do best in a heavy loam, with leaf mould added. It is not generally known that this Lily is a native of Japan. *L. speciosum* and its varieties, commonly called Japan Lilies, and the most beautiful of all Lilies, I find to do best in a light loam rich in vegetable matter. *L. auratum*, the Golden-banded Lily, and the most deliciously fragrant of all, does well under the same conditions, but seems to crave shade more than most others.

L. longiflorum, with a long list of *aliases* as well as long flowers, is generally supposed not to be hardy, probably because it is so largely grown under glass for winter-forcing; but this is a mistake, so far, at least, as the latitude of New York is concerned. I have grown it in the open air for more than thirty years, and have never known it to be winter-killed. It will do best in a rich loam, but flowers well in the ordinary soil of the garden. *L. Harristi* or *L. floribundum* is a varietal form of *L. longiflorum*, but is much to be preferred to the old form, being larger and more prolific, and repeats itself two or three times at that. *L. longiflorum* is also known as Easter Lily, Bermuda Easter Lily, Trumpet Lily, and by other names.

The beautiful little *L. tenuifolium* deserves a place in the border, where it will produce its tiny recurved flowers in the greatest abundance. *L. excelsum*, a tall-growing plant, bearing nankeen yellow flowers, is also easily grown in any good garden soil, but is impatient of much moisture at the root. *L. tigrinum* is an old favorite, common to almost every garden, and blooms freely in any ordinary border. The double form is very desirable, and is just as easily grown as the single, while the flower lasts much longer.

There are many other beautiful Lilies, more or less expensive; but the above are all good, reasonable in price, and quite enough for a beginning. I must mention, however, the California Lilies, such as *L. Californicum*, *L. Washingtonianum*, *L. Humboldtii*, *L. pardalinum*, *L. Parryi*, all of which are very handsome, and some of which require peculiar treatment. I find they do best in a sandy loam rich in vegetable matter, but without manure, unless it be old and thoroughly rotted. The soil may be enriched with manure after the bulbs have become established, and this is a good plan for all Lilies. I have known *L. Washingtonianum*, when planted in the spring, to remain dormant till the following spring, when it has started strongly.

A bed of Lilies is a very pretty sight, but I would advise the novice to grow his Lilies in the garden border, where he will be more likely to meet with success than in a bed. Planted among the small shrubs and herbaceous plants, they will get at the roots all the shade they need, and produce some charming effects in color and form. Lilies should be staked, and the stakes should be put in the ground when the bulbs are planted, and not afterward. They may be planted in the fall or in the spring; but if in the fall, it is just as well to throw a little coarse litter over them for the first winter. When doing the annual digging in the border, do not stir the soil around the Lilies more than two inches in depth. The bulbs should not be disturbed or divided more than once in four or five years.

If you can grow only a few kinds, begin with *L. speciosum* and its varieties, *L. longiflorum*, *L. candidum*, *L. tigrinum*, *L. superbum*, *L. bulbiferum*, and *L. auratum*; and if you do not succeed with the last on the first trial, keep on trying till you find some home-grown bulbs that will give you great golden-barred flowers that fill the air with the most grateful fragrance of the whole Lily family. P. B. MEAD.

OUR FLOWER BASKET.

Forest leaves held down with branches of evergreen trees make as good a covering as any for all kinds of plants. Now is the time to get them.

The watering-place and sea-shore season this year has been a remarkable one for the extent and amount of floral decorations used.

There is no more favorable season in the year for laying out new flower-beds, walks, and garden improvements in general than the late autumn months.

Gladioluses bear considerable frost, if they are planted deep, yet it is not prudent to run too much risk. They may be wintered in any dry, frost-proof place.

Chrysanthemums may be lifted and removed to their blooming quarters, or to replace summer bedding plants, or to nooks where they can be protected from frost, rain and wind by sheeting or matting. In this way their flowers may be preserved till the end of November.

The Window Garden

AND GREENHOUSE.

THE WINDOW GARDEN FOR OCTOBER.

Brackets and shelves should be properly fixed and in place, and plant stands painted or cleaned or held in readiness for use. Growing plants should be thoroughly cleansed from insects, and those that need it, staked and securely but loosely tied, and the pots they are growing in washed clean.

Lift and pot as soon as possible all plants required for winter decoration; we should endeavor to have them well-rooted in their pots before introducing them to our windows. Such plants as old Geraniums, Fuchsias and the like, that we merely wish to keep over winter for next summer's garden, we may allow to remain undisturbed till there is danger from frost, then lift, cut them well back, and pot them in small pots or put them thickly into boxes. But remember, frost does not benefit window plants, therefore we should guard them against a temperature under 40°; at the same time, so long as we can safely shelter them out-of-doors, in a cold-frame, or on the piazza, they are better there than coddled up inside of windows. I can do no better than tell you what I am doing with my own plants.

SWEET ALYSSUM.

Some plants of the doubled flowered in four or five-inch pots, still outside, will bloom all winter long.

AMARYLLISES

Were plunged outside all summer and have grown rankly. I shall soon bring them in doors and dry them off gradually, not wholly, to start in January to March for early flowers.

CALLAS.

I have lifted and repotted these in very open, turfy, rich soil; they are now standing in a warm, sheltered place outside. Water lightly at first.

EPIPHYLLUMS AND CACTUSES

Of all sorts are under cover, as wet rusts or rots them. The piazza is a good place for them a week or two.

PARIS DAISIES

Are still plunged out-of-doors and shall remain there for some weeks. I prefer throwing a sheet over them to protect them from slight frost, to taking them in-doors before November.

POINSETTIAS

Are also under cover. A warm, sunny spot on the piazza is a good place for them. Cold, and cold rains defoliate the plants and rot the roots; and without leaves or roots you cannot reasonably expect "flowers."

HELIOTROPES

For winter flowers are established in six-inch pots. It is no use depending on plants lifted now, they take so long to recover from the shock of moving.

VIOLETS.

These have been planted in frames and for a few days a lattice-shading placed over them. I will not cover them with sashes at any time except to protect them from sharp frost. Our out-door bed was planted so thickly that I shall leave and cover it up without disturbing the plants. I expect a good crop from it in spring.

CALCEOLARIAS, CINERARIAS, CYCLAMENS AND CHINESE PRIMROSES

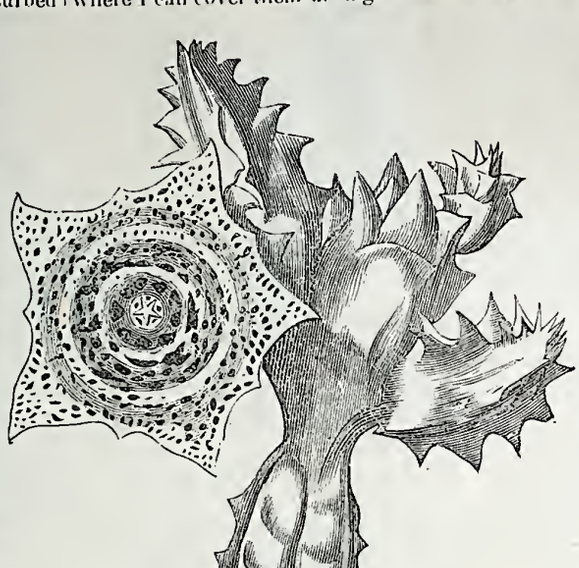
Are in two-and-a-half to five-inch pots and in cold-frames, where I can keep them cool, moist, slightly shaded from sunshine, and in vigorous growth.

FUCHSIA SPECIOSA

Is started and ready for winter. The others were planted out, and are now cut back, lifted and potted into as small pots as I could get their roots.

GERANIUMS.

Scarlet Geraniums, established in five and six-inch pots, are now stocky plants full of flower-buds; they are still plunged outside, but I shall soon bring them into a frame where I can cover them at night and from rain. Lady Washington Geraniums were planted out in summer and are now cut back, lifted and potted and standing outside till they begin to start a little. The prunings are used as cuttings, as my best blooming plants are usually only six to nine months old when in their prime.



STAPELIA LENTIGINOSA.

GLOXINIAS

In frames are about past. In a few days I shall cut them over, lift the "roots" and lay them one-deep and thickly in flats, which shall be kept inside and perfectly dry, and in a minimum temperature of 50°—55°. Pot-grown plants are still in their pots and quite dry.

BEGONIAS

I have in a cold-frame, and some in-doors, for wet as well as cold hurts them. The Rex sorts I shall keep a little dry to discourage growth, but the *rubra*, *odorata*, *fuchsioides* and others of that class, I encourage to grow and bloom in their own beautiful way.

HYACINTHS

And other Dutch Bulbs for winter flowers are potted, and placed thickly together out-of-doors under a bed of coal-ashes.

HYDRANGEAS

In pots shall be kept outside till defoliated, then placed in a cold-pit, there to remain till later on for forcing.

LIBONIAS

Are stocky plants in five and six-inch pots, now set in an uncovered frame. They were planted out during summer.

OUR FERNS

Have been cut so much all summer long that I cannot afford to let them all go to rest now. I am repotting the most vigorous ones, also the young stock; these will keep growing all winter long. Of course we only treat the evergreen sorts in this way. Some are outside, some inside, but it is now time that all of them were in-doors for the winter.

METEOR MARIGOLDS

Are in 5 and 6-inch pots, established, and full of buds. They will remain plunged outside till the end of the month. Slight frost won't hurt them.

MIGNONETTE

In pots and boxes and frames are in various stages of growth from germinating to blooming. Keep outside and exposed for nearly a month yet. Mile's Hybrid Spiral is excellent for winter use, being of a neat habit.

ROSES.

The Teas and Hybrids that were planted out have been lifted, potted, stood aside in a sheltered place, and well watered to get them well rooted before winter sets in.

STEVIAS

Are still plunged outside. They have been staked and repeatedly pinched. We feed them liberally with manure water.

STOCKS AND WALLFLOWERS

Are in four to six-inch pots and plunged outside. Those for flowering in pots shall be shifted again; those for out-door spring-blooming shall be turned out of their pots and planted thickly in a cold-frame. We will not cover them till November.

STREPTOSOLEN JAMESONI

Has made stout, fine plants. Each plant is tied to a stout stake. It needs lots of water and I give it weak manure water. It blooms in February till May.

CARNATIONS.

Most of these have been lifted, potted, staked, and placed in a warm sheltering place and freely watered; there they will make good roots before being brought in-doors. I don't like housing them before the end of this or beginning of next month. I am rooting a lot of cuttings now. These I shall keep over in a cold-frame, and plant out in spring for summer flowers.

SMILAX

Was rested a little in summer and is now cut over and some of it starting afresh. It now needs moisture and warmth to push it, but if we are not in a hurry about it, it will come along slowly for awhile, but fast enough after a month or two. It likes plenty of water and a good shower-bath.

WM. FALCONER.

THE CARRION FLOWER.
Stapelia.

In general appearance these odd-looking plants resemble some species of Cactus, but in their botanical position they have no relationship with them, and belong to the *Asclepiadaceæ* or Milk-weeds. All the species of Stapelia are natives of the Cape of Good Hope from whence they have been introduced since 1710.

The entire plant is very succulent, and requires treatment similar to Cactaceous or Crassulaceous plants. While growing vigorously they should be watered copiously, but at other seasons frequent watering will surely cause rot. They are propagated by cuttings placed in dry sand.

The flowers are interesting and showy. The bulbs are of a roundish shape, and starting in most species from the base of the plant; they are star-like in shape, and of a peculiar brownish or yellowish color not frequent in other flowers; they smell very much like carrion so that flies are attracted and will sometimes lay their eggs upon them.

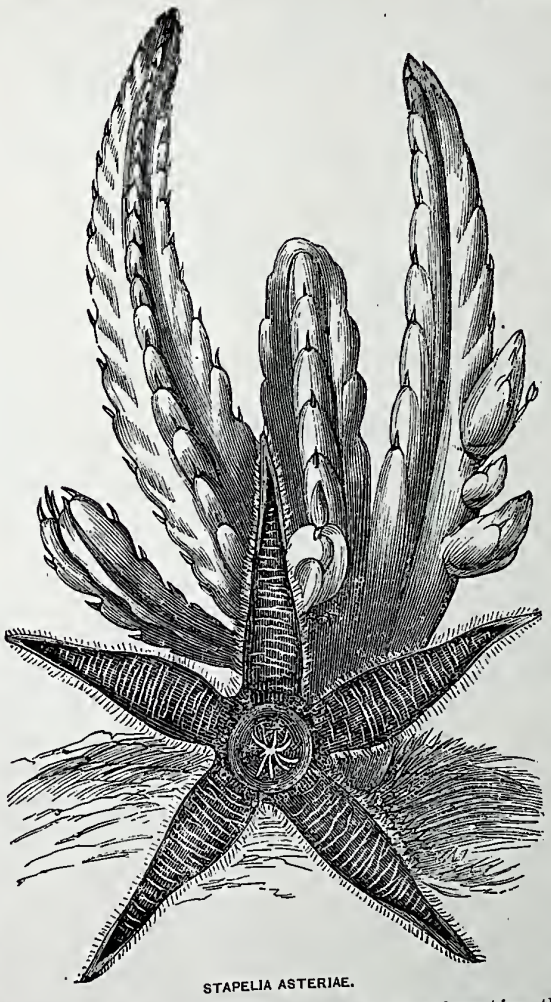
THE JACOBAEAN LILY.
Sprekelia formosissima.

The scarlet Jacobæan Lily, or as it is termed in some catalogues, *Amaryllis formosissima*, is a very beautiful bulbous plant belonging to the Natural Order Amaryllidaceæ. It is a native of South America, from whence it was introduced in 1658, and it is to be regretted that it is so seldom seen in cultivation at the present day. The bright green leaves are about half an inch wide, from 10 to 12 inches long, and the brilliant, scarlet, velvety flowers are produced on single flowered scapes from nine inches to one foot in height. Each bulb generally produces two stems one after the other, each stem being surmounted by a single flower, nodding on one side, thus presenting a very graceful appearance. The flower is composed of six petals, three hanging down and three being erect and recurved. The time of flowering depends upon the manner in which the plants are grown.

As generally cultivated the Sprekelia flowers in June or July; the bulbs being planted in the open ground early in May. The border should be well enriched and the bulbs placed about six inches apart. The bulbs ripen off by fall when they can be taken up, dried, packed in sand, and stored in a dry, frost-proof cellar until they are wanted for planting again. To cultivating the plant in this manner there are these objections, that blooming at a season when there are so many other flowers, their superb beauty is too little appreciated, then again storms and changes of the weather soon destroy the flowers, so that I think on the whole it is far better to have them bloom during the winter and early spring months.

This can be accomplished by potting the bulbs about the middle of October and then placing them in a cool, dark cellar until it is desired to start them into growth. A four-inch pot will answer for a single bulb and if larger pots or pans are used two or more bulbs can be placed in them. Care should also be taken to drain the pots well and to use a compost composed of two-thirds light, loamy soil and one-third well-decayed manure.

During their seasons of growth water should be freely given and after flowering it should be gradually withheld. When all the foliage has decayed, turn the plants out of the pots and treat the bulbs as advised for outside grown plants. A light, sunny situation, with an average temperature of 58°, is the most suitable for the successful cultivation of this beautiful bulbous plant, whether grown in the greenhouse or window garden, for either of which it is equally adapted.



STAPELIA ASTERIAE.

The popular name Jacobæan Lily has been given on account of the brilliant scarlet color of its flowers, which the Spaniards in Peru thought resembled the scarlet swords worn by the Knights of the order of St. James (Jacobæus). The generic name Sprekelia was given in honor of Dr. Sprekel, a German botanist.

CHAS. E. PARNELL.

STEAMER FLOWERS.

A horticulturist who recently made the trip from here to Liverpool, writes that in a mixed bouquet comprising choice varieties of Roses, Geraniums, and many well-selected blossoms, the Chrysanthemums, Daisies, Pyrethrums, and other flowers belonging to the order *Compositæ*, kept the entire voyage of eight days, almost as fresh as when first cut from the plants, while the Roses and nearly all other kinds withered. This information should be noted by those who wish to send European friends American flowers.

The floral souvenirs carried away by the steamers have been very handsome this summer. Large satin boots of different colors with a cord and tassel at the ankle to tie the flowers, have been fashionable for bouquet-holders. Convenient cases for toilet articles to be used in the cabin have been filled for parting gifts with blossoms. What is known as a "Steamer bag," containing many pockets, was beautifully arranged with Corn flowers, for a farewell present.

OUR WINDOW BOX.

Always give ventilation at the top of windows, not at the bottom.

Geraniums, Fred Dorner and Freddie Heinel are by some of our readers considered the best "perpetual blooming" varieties.

Cork dust, such in which Spanish Grapes are packed, has been recommended for drainage of flower-pots, as retaining a more uniform moisture, and lessening the weight of the pots.

Cleanliness cannot be too scrupulously observed with house plants. Thick-leaved plants should be washed with tepid water and a sponge, and others sprayed whenever practicable.

One of the old, exploded notions is that plants in living-rooms are unhealthy. Strong-scented flowers may be so, but a single lamp burning in a sleeping-room vitiates the air more than a window full of plants.

It is not worth the trouble to dig up old plants that have bloomed all summer, and pot them in the expectation of having them bloom all winter too. Young, thrifty plants are best for winter-blooming.

Dielytra or Bleeding Heart is an excellent plant for winter-forcing. Small clumps should be taken up after frost, potted, and kept in a cool place until they show signs of growth, when they may be removed to a warmer position. When growing they require an abundance of water.

Palms, Draceenas, Pandanus, Nepenthes, Agaves, Ferns and similar plants are largely used in house decorations now, and some florists make a specialty of renting such plants for an evening, or day, or any time desired. Sometimes the plants are insured against fire, just like furniture.

A plant, or a stand of flowers, says E. S. Rand, is a constant source of pleasure in a room; it is a spring of sunshine, and its silent influence makes all the household more cheerful and better. We would have flowers in every house, for their sunny light, for their cheerful teaching, for their insensibly ennobling influence.

Exhibitions & Societies.

AMERICAN POMOLOGICAL SOCIETY.

Editorial Correspondence of The American Garden.

One of the most interesting and valuable meetings in the history of the Society was that held in Grand Rapids from September 9th to 11th. No more appropriate place as to location could have been selected, and certainly none where the residents were more in accord with the cause of the Society, and more anxious to make the stay of the members and delegates as pleasant and agreeable as lay within their power. The Universalist Church, where the meetings were held, is a large, commodious building, situated on a quiet street, and was excellently adapted for the purpose; a large floral monogram of the Society's initial letters, arranged against the organ in the front center, and some large, beautifully arranged varieties of flowers offered a bright greeting of welcome.

The exhibition of fruits was in a large, tastefully decorated hall, a few blocks distant. The Michigan exhibit was by far the largest, comprising about 1000 plates of fruits, and representing every section of the State. Ohio and Missouri had the next largest. The collections of 140 varieties of Pears from Ellwanger & Barry, Rochester, N. Y.; 100 varieties of Pears from President Wilder, Boston; 61 varieties of Pears from B. G. Smith, Cambridge, Mass.; 28 varieties Crab Apples from P. M. Gideon, Excelsior, Minn., and the exhibit of Cocoanuts grown in Florida by Field & Osborn were especially meritorious and were awarded Silver Wilder Medals. The number of new and promising new fruits was very large. One of the most interesting exhibits, collected by Prof. L. H. Bailey of the Michigan Agricultural College, consisted of some seventy-five kinds of berries, nuts and other native fruits, some of which are probably adapted to improvement, and may in time find their places among our cultivated fruits.

The announcement of President Wilder's inability to be present was a great disappointment to the members, and 1st Vice-President P. J. Berckmans being also obliged to be absent on account of illness, Patrick Barry of Rochester, N. Y., was unanimously chosen chairman. Addresses of welcome were delivered by T. T. Lyon, president of the Michigan Horticultural Society, for his society, Mayor J. L. Curtiss for the city of Grand Rapids, and President Angell of the University for the State: for all of which President Barry, in his usual graceful and felicitous manner, returned the thanks of the Society. The appointment of the various committees, and other routine work followed, after which President Wilder's invitation to meet in 1887 in Boston was accepted by a unanimous rising vote. The following officers were then elected: President, Hon. Marshall P. Wilder; First Vice-President, Patrick Barry; Treasurer, Benj. G. Smith; Secretary, Chas. W. Garfield; and a Vice-President for each State.

President Wilder's address was then read by Prof. Beal. It is a beautifully written, clear account of what the Society has already accomplished, and what is its future mission; we only regret that our limited space does not permit our publishing it in full.

"When we reflect on the unsettled and chaotic condition of pomology in our country when our Society was established, the narrow limits to which fruit culture was confined, and the few engaged in it, and compare it with the immense territory now occupied for this purpose, and its importance as a great industry of our country," says the President, "I think it may be well to take a retrospective view and see what our Society has accomplished.

"Its formation opened a new era of enterprise in the annals of American Pomology, which has no parallel in those of other lands. It was the first great national pomological society, embracing in its organization the largest arena for fruit culture in the world, where almost every fruit of every zone may be grown in perfection.

"It has brought into close communion of interest, and concert of action, the most experienced and skillful pomologists of our country; and by its proceedings and publications has furnished examples and methods of work which have been adopted by other pomological and horticultural societies, all working harmoniously together, and thus has become the acknowledged authority of our land.

"It is truly an AMERICAN Society, having, through all the vicissitudes of the past, held in the bonds of friendly intercourse for the promotion of our cause, the North, East, West and the South, and every region where fruits can be grown on this continent.

"It has raised the standard of excellence by which our fruits are judged, discouraged the cultivation of inferior sorts, and thus educated the taste of the public for those of better quality, so that kinds once common in our markets have become obsolete, and are now considered unworthy of propagation. In doing this portion of its work it has discarded by general consent more than 600 varieties, either worthless or superseded by better sorts.

"It has established a uniform system of rules, by which fruits are to be shown and judged. But, what is of the highest importance, it has instituted a much-needed reform in the nomenclature of fruits, by which all long, unpronounceable, indelicate, inappropriate, and superfluous words are to be suppressed in the dedication of our fruits.

"One of the grandest achievements of the Society is its Catalogue of Fruits, published biennially, with isothermal divisions and columns for fifty States, Territories, and districts, in which are recorded the fruits which may successfully be grown in those divisions, with stars to designate the merits and seasons of each. This is a work of great merit, and not attempted by any other society.

"Few things in the history and progress of American Pomology have been more effective in the past and more promising of valuable results in the future than our system of State Reports. They embrace correct information from trustworthy persons, having special reference to the varieties most successfully grown; new kinds worthy of special notice; the chief obstacles to successful fruit culture in each district; and correct information in regard to the extent and progress of fruit culture in each section of our country, and are published under the supervision of the chairman of the General Fruit Committee of our Society, and contain a vast fund of information not elsewhere to be found.

"These reports constitute a mine of pomological wealth, and contain not only all the modifications and changes which may have been made in collecting information concerning the *culture* of fruits, but also in the *naming* of them, and the synonymes by which they are known; the most desirable varieties being designated in our catalogue by stars, according to their several merits. Had it done nothing else, this alone would entitle our Society to the universal approval which it now receives, and the gratitude of the generations which are to succeed us.

"Before the organization of the Society, while we had around us an immense region ready for the cultivation of the finest fruits, great profusion prevailed in nomenclature, and the difference between good and bad sorts was very dimly appreciated. At that time, pomologists experienced great difficulty in obtaining varieties true to name; and sometimes, after repeatedly procuring fruits, and losing years in waiting for them to bear, found themselves where they started. The American Pomological Society has performed an immense labor through its meetings and its committees, in correcting this confusion, and it is wonderful to contrast the early condition of pomology with its present mature state. Its future labor will be continuous and of vital moment, in introducing new and valuable varieties; and what will be of the greatest importance, maintaining an accurate nomenclature. It will inform fruit-growers, in every State and Territory, what fruits they are to look to for successful culture. But most important of all, its business will be *to give American Pomology a high character as a science;* to prevent the appearance of mere money-making and petty attempts to impart undue prominence to new favorites by laudatory names. The continued aim of the Society will be to maintain a position of dignity, integrity, and impartial usefulness.

"To record all the good the American Pomological Society has accomplished would be equivalent to writing the history of American Pomology during the period of the Society's existence. Its PROCEEDINGS are not only a record of the events of the time, but they clearly show that the Society has been preëminently instrumental in shaping and directing the pomological destinies of our continent. It has organized and systematized everything pertaining to fruit culture, and has developed and elevated American Pomology. The Fruit Catalogue is a grand and glorious work, but far greater is the educational and refining influence which the Society exerts over its members. No one,—unless he be irredeemably depraved,—could attend its meetings without becoming not only a better pomologist, but also a better man and Christian.

"The work which our Society assumed was immense. It required a great society to carry it on. A great amount of time, labor, and treasure has been expended in bringing it to its present flourishing condition; but however great the labors performed, and the sacrifices made in behalf of our Society, not

one regrets them, but all rejoice that they have had a share in promoting a work so beneficent in its design, and in perpetuating it for the comfort and happiness of mankind.

"That the Society's mission for the future will be not less beneficial is hardly to be doubted, built upon so solid a foundation as it is. It will continue and complete the reform in nomenclature just commenced. As the laws that govern cross-fertilization become better and better understood, it is not improbable that the most desirable types and strains of fruits will become more firmly established, resulting in the diminution of the number of varieties, and the perpetuation of only those best adapted to our various climates and soils. The special aim of the Society should be to enlist in its active membership all the best elements of our country, and to form, as far as possible, a closer relation with all existing State Pomological or Fruit Growers' Societies."

[TO BE CONTINUED.]

SOCIETY OF AMERICAN FLORISTS.

THE MEAT OF THE MEETING.

Special Correspondence of The American Garden.

(CONTINUED FROM SEPTEMBER ISSUE.)

A committee was instructed to draft resolutions in regard to the more careful handling of flowers by express companies. In a paper on

THE PROPAGATION OF TEA ROSES,

Their treatment, and originating new varieties, Jno. May of Summit, N. J., said that the Teas were not only the most favored, but commercially the most valued of all Roses. To propagate them, take thrifty cuttings in January, cutting just below a bud; give a moderate, steady bottom heat, and keep them shaded from a hot sun. When rooted, pot off in two-and-a-half-inch pots in a compost of two parts decayed cow manure to three of rotted turf, and shade from the hot sun for a day or two. Give a night temperature of 50° to 55°; water sparingly and syringe every other day. In six weeks repot into four or five-inch pots, being sure to have the ball of earth thoroughly moistened through, but wet enough to be muddy. When the roots have filled the pots, shift into seven-inch pots and then into larger ones as necessary.

Near the close of summer prepare benches; cover with thin sods, grass down, and fill in with eight or nine inches of compost. Set the plants in this 15 to 18 inches apart; water as needed and when the night temperature falls below 56°, cease syringing late in the day. About Oct. 1 mulch with two parts of cow manure to one of rotten turf, one and one-half inches thick, and as the season advances, water with liquid manure made of one peck cow manure to fifty gallons of water. Hen manure may also be used, in which case one-third less will make a solution of sufficient strength. For mealy bugs and red spiders, paint the heating pipes with sour milk and sulphur. Rose houses should have movable roofs, to be taken off in summer. In September let the beds get dry and do not apply heat until thoroughly frozen. Then cut out dead and immature wood and mulch with cow manure. As soon as the frost is out, water thoroughly and gradually increase the heat.

To originate new Roses, select parents that possess desirable qualities. Bon Silene is a good example of what such qualities should be. Remove stamens from the mother flowers and fertilize by hand. If the operation is successful let the seed pods remain until thoroughly ripe or yellow. Gather in October and pack in sand until January, when the seed may be sown. The chances for success are many blanks to one prize. Our climate is favorable, however, and perseverance will sooner or later be rewarded. There is no reason why we should go to Europe for our new Roses. If you ask, What would be desirable in a new Rose? I may answer: A bright scarlet, the color of the General Grant Geranium.

Robt. Craig, of Philadelphia, said the cause of disease in Roses deserves careful investigation, but as newly imported Roses are healthy for a year or two, this seems to point to a way out of our difficulty. If we import our plants we are always sure to have them healthy. Our hot summers do not give the Rose a chance to rest, and thus its constitution is weakened.

John Henderson of Flushing, L. I., thinks Roses are more healthy when grown in beds than on benches.

I. H. Taylor of New York, considered pit-grown Roses more healthy, but they refuse to bloom in January and February when flowers are most desirable. He prefers the benches, and has run one house continuously with success.

Secretary E. G. Hill, Richmond, Ind., has imported many Roses, but in thus escaping one disease has got another. He has been successful with benches having plenty of space (three-quarters of an inch) between the bottom boards.

Jas. Hendricks, Albany, N. Y., prefers pits. He has tried benches and failed. He nearly lost all his plants in one house last winter from a new fungoid disease that baffled every remedy tried.

C. L. Allen thinks that plants like animals have certain limitations. The faster the pace the sooner the end. If we force production under unnatural conditions we can only expect disease and speedy death. There are in the world about 142,000 known species of plants, each filling its appropriate place, and consuming its peculiar food. When that food is exhausted there is no farther place in the economy of nature for that plant, and it perishes.

If this theory is true, then it explains why we must constantly renew our old collections with new plants containing different combinations. The originator of such a Rose as "Her Majesty"—measuring nearly seven inches in diameter—has not lived in vain.

Mr. Jordan said the West has long, hot, dry summers and sudden winter changes that make plant-growing a different business in some respects from that at the East. Up to this time plant literature has been written and talked only from Eastern experience. The production of Roses during summer is a matter of importance, as the demand then is rapidly increasing, and florists will be obliged to meet it.

WHAT SHALL WE GROW FOR EARLY SPRING AND SUMMER CUT FLOWERS?

A paper by Henry Michel of St. Louis, was read by Mr. Armstrong of the same city. Mr. Michel has been long in the florists' business, in which he is considered successful, but he signally failed in telling what florists so much wish to know, i. e., something new about flowers for May and June. He lengthened the list until it included everything from the Crocus to the latest Chrysanthemum, without giving any really new information, except the fact that a new, single Tuberose had originated in his grounds that was liable to throw up three or four flower stems from a single bulb and prove an acquisition on account of being two weeks earlier than the common kind.

President Thorpe read the following list from his note book: *Anemone, Japonica* and *alba*, where they succeed; *Helianthus multiflorus, var. filipendula plena; Miller's Tritoma*, a Mexican plant that in its native state only throws up two flower stems, but in this country under good cultivation it will send up seven; *Lychnis coronata alba; Spiræa filipendula flore plena*, not entirely hardy at New York; *Asparagus tenuissimus*, the new bouquet queen plant which fills a long-felt want and has come to stay.

Mr. Hamilton considered the *Freesia refracta alba* one of the most valuable flowers for forcing. In form it is something like a Gladiolus with the fragrance of a La France Rose or a bed of Violets. Its season is the latter part of winter. L. B. PIERCE.

[TO BE CONTINUED.]

TEXAS TO THE FRONT.

The following named nurserymen met in Dallas, Sept. 7, 1885, and organized the Texas State Nurserymen's Association:

J. W. Brice, Terrell; Robert Worth, Fort Drum; J. F. Emerson, Mineola; J. B. Baker, Fort Worth; A. W. Kerr, Sherman; E. W. Kirkpatrick, McKinney; J. R. Johnson, Dallas; J. S. Boyd, Bedford; E. I. Kenedy, Terrell; H. K. Harris, Duck Creek; D. J. Eddleman, Denton; Wesley Love, Jacksonville; L. K. Egerton, Denton; John H. Stone, Weatherford; E. N. Williams, Terrell; S. A. Mahon, Dallas; J. M. Howell, Dallas.

The officers for the ensuing year are: President, E. W. Kirkpatrick; 1st vice-pres't., J. W. Brice; 2d vice-pres't., A. W. Kerr; executive committee, E. W. Kirkpatrick, J. W. Brice, J. F. Emerson; secretary and treasurer, J. M. Howell. The next annual meeting will be held at Denton, on the second Wednesday in August, 1886.

J. M. HOWELL, *Secretary.*

AMERICAN INSTITUTE FAIR.

The annual Fairs of the American Institute of New York are among the chief attractions of the city at this season. Extraordinary efforts have been made to make this year's Exhibition more interesting than any previous one, and the great Exhibition Hall occupying the whole square bounded by 3d and 2d Avenues and 63d and 64th Streets has been put in complete repair. The Fair will continue from September 30th to December 5th, and will open with an Exhibition of plants, flowers, floral decorations, etc., continuing till the 3d of October. The Exhibition of fruits and vegetables will be held on Wednesday, the 7th of October, and continue one week. An Exhibition of Coniferous Plants will commence on Friday, October 16th, and continue one month, and an Exhibition of Chrysanthemums will be held some time in November. Liberal Premiums are offered, and no entry fee is required in these classes. Premium List may be obtained by addressing the Secretary, John W. Chambers, American Institute, New York.

WOMEN WORKERS

IN THE GARDEN AND FIELD.

A well-known doctor asserts that barbarous garments alone have incapacitated more women than over-study and over-work of all kinds.

The city engineer of Montreal has found a woman who for sixteen months has been engineer in a boot-heel factory, has a perfect knowledge of her business, and never met with an accident.

Susan Power writes of several women who have been very successful as florists and gardeners. We would like to have full accounts of any such successes. Many lady readers of THE AMERICAN GARDEN are practical horticulturists, to their honor be it said.

A woman driving about the country, with a little brother or son to hold the reins, is a common sight. But such a woman is not one of the sort who believes it part of her life to help and care for herself. The woman who can do and who loves to do these little things for herself is the one whose name will have an honorable record in the pages of life.

A woman may have no carriage, but she can hang delicate vine leaves along her porch, so exquisite in delicacy that no sculptor's art can equal it; no conservatories with their wonders, yet she and the sun can build up a coppice of blooming things in her dooryard of which every floral leaflet is a wonder of beauty and pleasure.

The kitchen garden would usually suffer but for the attention and thoughtfulness of the housewife. She need not do the hard work, but it will do her good to spend an hour there every morning superintending the work, and planning improvements; even pruning and weeding a little herself.

France has agricultural schools for girls. One of the chief is near Rouen, which has 300 girls from 6 to 18. The farm has over 400 acres. Twenty-five sisters are the teachers. The pupils are in great demand on account of their skill, as stewards, gardeners, farm managers, dairy women and laundresses. Each girl has, on leaving, an outfit and a small sum of money, earned in spare hours. If they want a home, they can always return to Darnetel, which they are taught to regard as home.

Marriage is not the chief end of every woman. A Dakota girl says: There is no love-making in my half section. It's nothing but number 2 Wheat from May to August. That's what we are out there for. Now, I own and manage a farm of 320 acres, and this year I took out a crop of eighteen bushels to the acre and sold it, got the cash, put it in the bank, discharged all my men but one, who will look after things this winter, and I'm off for a little fun down east. Marriage? that's what all the good-for-nothing cranks of men that I see from plowing time to harvest can talk about. What do I want to get married for? There are over 300 of us girl farmers in Dakota, and we will hold a convention some time. I never saw a man yet that I would have around.

ANSWERS TO CORRESPONDENTS.

Gloxinias.—*Mrs. M. C. P., Ohio.*—Seed may be sown at any time, but spring is best. Being extremely fine it must be covered but very lightly, and kept constantly damp; the soil should be light and rich. The seedlings will generally vary in many shades and colors. Gloxinias may also be propagated by dividing the roots in spring, but the usual method of propagating plants is by their leaves which root readily in an ordinary propagating bed.

Hibiscuses are about as hardy as Geraniums. Snuff has little effect on black aphis, but Tobacco tea or Tobacco soap act very satisfactorily.

Tulip Seedlings, White Fringe.—*H. G. M., Ind.*—There is no difficulty in raising Tulips from seed. Sow as soon as the seed is ripe. When the seedlings first bloom they generally produce flowers without stripes, and it may be several years before they "break," after which they retain this special character.

The White Fringe Tree, *Chionanthus Virginiana*, may be propagated by seeds or cuttings. It is also frequently grafted on common Ash, which makes it grow more vigorously.

Irish Juniper and Golden Retinospora are generally hardy in latitude 41, unless planted in very exposed positions.

California Fuchsia.—*R. L., New York.*—There is no true Fuchsia indigenous to California. This name has been suggested, we believe for *Zauschneria Californica*, a very pretty plant resembling somewhat a Fuchsia in general appearance.

Cure for Flies.—*Mrs. L., Seabright, N. J.*—Yes, there is a complete and easily applied remedy for flies, and this is Buhach. We would not be without Buhach in the house for a good deal. Close all the doors and windows, and dust the powder against the ceiling and walls, with the little bellows made for the purpose; keep the room closed for half an hour, then come with a broom and dust-pan, and sweep up the flies from the floor by the shovelful. By keeping the room dark when not used, flies will not trouble you any more that day. Mosquitoes may be killed in the same way, and more effectively still by burning a small teaspoonful of Buhach on a tin plate, or a piece of paper.

The questions about Roses were fully answered in our August number.

Plants for a Small Greenhouse.—A much greater variety of plants may be grown in an ordinary greenhouse with a temperature of about 50° than is generally supposed, provided proper care is given to watering, ventilation and cleanliness. The following will be a good collection to begin with: Azaleas, Camellias, Daphnes, Heliotropes, Acacias, Stevias, Abutilons, Chorizemas, Jessamines, Fuchsias, Mahernias, Geraniums, Verbenas, Cuphens, Salvias, Calceolarias, Cinerarias, Carnations, Callas, Primulas, Roses, Violets, Bouvardias and many others.

TRADE NOTES.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

Chas. V. Mapes, friend of gardeners, takes his rest in beguiling the gentle blue fish into his stew pan.

W. Atlee Burpee has been spending his vacation in the mountains. No doubt he comes back full of strength and ideas for the work of the coming campaign.

P. M. Augur & Sons report a rousing full trade in Strawberry and other small fruit plants. It ought to be so, for they have a Jewell in that new Strawberry.

The Hudson river fruit growers have a fine prospect for a big Grape crop, and so may perhaps retrieve the losses caused by drouth to the Strawberry and other early crops.

Mr. Hitchings, head of the well-known firm of Hitchings & Co., New York, manufacturers of greenhouse heaters, is dead. He was a successful and honored merchant.

The florists hope to gain greatly by the influence of their recent meeting at Cincinnati, and we believe they will. The nurserymen and fruit growers, as well as the dairymen and breeders, have helped their business greatly by similar meetings and organizations.

C. M. Hovey & Co., 21 South Market St., Boston, announce their succession to the late firm of Hovey & Co. Mr. C. M. Hovey was long connected with the latter firm, of which it seems a pity to change the name. The Hoveys have a well-known and honored name in the seed and plant trade.

Our genial friend, Joseph Harris of Rochester, N. Y., writes that his seed crops this year are remarkably good, especially of Onion, Mangold, Beet and Celery, but the frequent rains he fears (Sept. 9) may interfere with the proper curing of the Onion seed.

The A. C. Nellis Company, is the style of a corporation recently formed by A. C. Nellis, *prest.*, F. E. Simons, *vice prest.*, C. F. Wheelock, *treas.*, W. H. Finehout, *sec'y*, and T. A. Howland. The new corporation will carry on the late seed business of A. C. Nellis at Canajoharie, N. Y. Capital stock, $50,000. We suppose that "Mohawk Valley Seeds" will now be boomed.

W. W. Rawson, Boston, though a seedsman now, is still a shrewd market gardener. He lately showed us a sample of four Montreal Musk Melons averaging 15 lbs. each, which took first prize at the Massachusetts Horticultural exhibition, and then he sold the lot in Quincy market for $10. A good strain that, to get stock seed from.

GOOD WATER.

The Waukesha Glenn water advertised in this issue is one of the very finest of all table waters, and is fast becoming known as a specific for many diseases of the stomach and bowels. It seems like "carrying coals to Newcastle" to bring spring water from the West to the East, but the Waukesha Glenn is gaining many converts to its virtues in all sections.

THE FLORAL WORLD.

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The Largest Cabbage Growers in the World. (W. M. Johnson & Co. of Chicago,) use upwards of five thousand acres of land for growing Cabbages. Last season they manufactured nineteen thousand six hundred barrels of sourkrout, besides shipping four hundred and sixty-seven carloads of Cabbages to eastern cities. They use and recommend Tillinghast's Puget Sound Cabbage Seeds. The disseminator of this renowned brand of seeds, Isaac F. Tillinghast, of La Plume, Pa., in order to introduce them into every county in the Union, has organized a Seed and Plant Growers' Association. One reliable party in each town in the Union is being enrolled as special agent, and is supplied with seeds in trade-marked packages, and also instruction books which will enable anyone to grow Cabbage plants successfully anywhere. Parties desiring seeds or plants, will, upon application to Mr. Tillinghast, be furnished with the addresses of agents nearest them from whom they may be obtained. Purchasers are thus saved unnecessary express charges and assured of obtaining the best strain of Cabbage seeds or plants which can be procured.

This association thus furnishes one man in each town—the appointed agent—a good cash-paying business in selling seeds and growing and supplying plants. There are still many excellent localities unoccupied, and anyone so situated as to act as agent for this association should address Mr. Tillinghast as above, for particulars in regard to it.

Mr. Tillinghast has also just put upon the market a "Cabbage Pest Powder" which is entirely harmless to the plant at any stage of its growth, and also harmless to persons eating them, yet the most effective destroyer of flee, flens and worms which has ever been compounded. It retails at 24 cents per pound.—*Adv.*

What kind of cattle do they have at Zanesville, Ohio? A man advertises that he wants a woman "to wash, iron and milk one or two cows."

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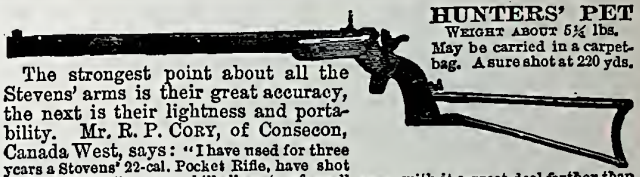

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(Continued from page 256).

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For the promotion of horticulture, THE AMERICAN GARDEN offers the following prizes of $100 each, or silver plate of equal value. No varieties offered for sale previous to May 1, 1885, to compete. Plants or seeds are to be sent to the committees for growing in their own grounds for trial, under restrictions not to be propagated or sold. The prizes are to be awarded to the originators.

(*a*.) The varieties put in competition are to be shown at three or more State, National, or other equally important exhibitions, in 1885 and in 1886, under the rules of the societies where exhibited. The awards will be made by committees—chosen from among members of the American Pomological Society for fruits, American Horticultural Society for vegetables, Society of American Florists for flowering plants—in the fall of 1886, or at such times as the committees shall decide that the conditions have been met.

(1) *For the best Grape* which shall combine territorial adaptability with superior shipping and table qualities. A vine with the current year's growth, a portion of the previous year's growth, with all fruit and foliage growing thereon intact, and at least six bunches of grapes shown separately, to be exhibited as above (*a*). $100 or plate.

(2) *For the best Strawberry* which shall combine territorial adaptability with superior shipping and table qualities. A plate of not less than 50 berries, and three plants with all roots, foliage and fruit intact, to be exhibited as above (*a*). $100 or plate.

(3) *For the best Raspberry* which shall combine hardiness, productiveness and superior shipping and table qualities. Same conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(4) *For the best Gooseberry* which shall combine large size, productiveness and freedom from mildew. Same conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(5) *For the best Blackberry* which shall combine large size, good quality, hardiness and productiveness. Conditions as for (2). To be exhibited as above (*a*). $100 or plate.

(6) *For the best New Fruit* (a new species is required) to thrive north of Virginia and Kansas. To be exhibited as above (*a*). $100 or plate.

(7) *For the best new Potato* which shall combine superior quality, productiveness, and freedom from disease. One peck to be exhibited as above (*a*). $100 or plate.

(8) *For the best new Vegetable* other than Potato (either a new variety or species), table and shipping qualities and profitableness of culture to be considered. To thrive north of Virginia and Kansas. To be exhibited as above (*a*). $100 or plate.

(9) *For the best new flowering Shrub* which shall be hardy in the Northern States east of the Rocky Mountains. To be exhibited as above (*a*). $100 or plate.

(10) *For the best new herbaceous Perennial flowering plant* which shall be hardy in the Northern States east of the Rocky Mountains. To be exhibited as above (*a*). $100 or plate.

We shall make no claims or conditions whatsoever that would influence the naming or disposition of the prize-winning varieties.

The competition is open to North America.

The committee for the award of the Fruit prizes are:

J. L. Budd, Ames, Ia., professor of horticulture in the Iowa Agricultural College. Chas. W. Garfield, Grand Rapids, Mich., Sec'y Mich. Hort. Society. P. T. Quinn, Newark, N. J., Sec'y N. J. State Board of Agriculture. William Saunders, London, Ont. E. Williams, Montclair, N. J., Sec'y N. J. Hort. Society.

The committee for the award of the prizes for Flowering Plants are:

John Thorpe, Queens, N. Y., president Society of American Florists. Robt. Craig, Philadelphia, Pa. Robt. Halliday, Baltimore, Md. E. G. Hill, Richmond, Ind., Sec'y Society of American Florists. Harry Sunderbruch, Cincinnati, O.

Parties intending to compete are requested to inform the undersigned, for record.

Reports of judges on any new fruits, flowers, or vegetables at any exhibition in America are solicited. (Signed) E. H. LIBBY, Greenfield, Mass., May 1, 1885.

CATALOGUES RECEIVED.

De Veer & Boomkamp, 19 Broadway, New York. Special Offers, 450 assorted Dutch Bulbs for $3.75.

F. E. McAllister, 22 Dey Street, New York. Autumn Catalogue of Bulbs and Seeds.

P. M. Augur & Sons, Middlefield, Conn. Circular of the Jewell Strawberry, with colored plate.

E. C. Haines, Bedford Station, Westchester Co., N. Y. Descriptive Price List of Strawberry plants. Colored plate of the Atlantic.

Lewis Roesch, Fredonia, N. Y. Semi-annual Trade Price List of Grape-vines and Small Fruit Plants.

Robert Johnston, Shortsville, N. Y. Retail Price List of Small Fruits and Fruit Trees. Ontario Strawberry, and Desotto Plum specialties.

R. Thomson, Jr., Spartansburg, S. C. Price List of Plants, Bulbs, Tubers. Southern Plants a specialty.

J. U. Parrey, Three Oaks, Mich. Illustrated and Descriptive Catalogue of Incubators, Brooders, etc.

J. Jenkins, Winona, O. Wholesale Price List of general nursery stock. Tree seedlings a specialty.

T. S. Hubbard, Fredonia, N. Y. Wholesale Price List of Grape-vines, Small Fruits, etc. Colored plate of the Empire State Grape.

E. W. Durand, Irvington, N. J. Strawberry Circular, giving description of his seedling Strawberries.

George S. Josselyn, Fredonia, N. Y. Wholesale Catalogue of American Grape-vines and Small Fruit Plants; also colored plate and circular of Fay's Prolific Currant.

J. T. Lovett, Little Silver, N. J. Trade List of Fruit Trees, Small Fruits, etc. Also descriptive Circular of Golden Queen Raspberry, and Uncle Tom Blackberry.

Wm. Parry, Parry, N. J. Illustrated and Descriptive Catalogue of Small Fruits, Fruit and ornamental trees. Colored plates. Parry and Lida Strawberries, Wilson Jr. Blackberry, and Lawson Pear specialties.

Gleason & Bailey M'f'g Co., Seneca Falls, N. Y. Warerooms cor. Mercer & Houston Sts., N. Y. Illustrated Catalogue of Pumps for every purpose, and all kinds of Fire apparatus. This is one of the oldest and most reliable houses in this line, and their manufactures enjoy an enviable reputation wherever a good article is appreciated.

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Prospectus continued on next page.

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—PROSPECTUS FOR 1886.—CONTINUED.—

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I have taken THE AMERICAN GARDEN for a number of years. It fills a place long needed in horticultural publications. I am very glad to see it improved.—*Geo. J. Streator, Garrettsville, Ohio.*

I would not exchange THE AMERICAN GARDEN for any other horticultural Journal in the country, and you may rely on me to be one of your regular subscribers.—*R. H. Arming, Hampden, Md.*

The September number more than any previous one of my acquaintance, is artistic and practical, and although not *the* paper for the professional horticulturist or florist, yet a paper I suspect we cannot do without.—*H. B. Crissey, Nurseryman & Florist, Fredonia, N. Y.*

I could no more do without THE AMERICAN GARDEN than I could without a daily newspaper.—*Mrs. E. H. Hesse, Utah.*

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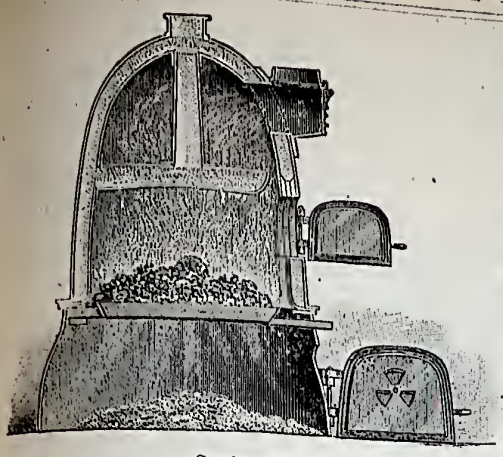

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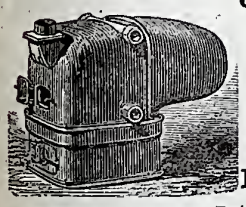

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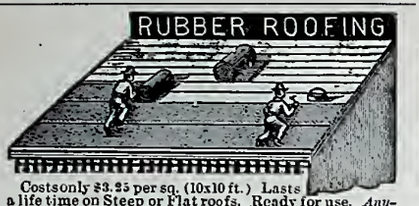

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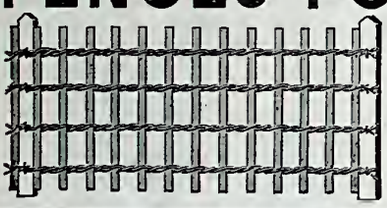

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The American Garden

A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

Vol. VI. (Old Series, Vol. XIII.) NOVEMBER, 1885. No. 11.

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INDIAN SUMMER DAYS.

The autumn fires, so late alight,
Far up the mountain sides,
While shaping from the falling leaves
Adornings meet for brides,
Are changing now to ashen hues,
And dying slowly down,
Shining, purpling, flecking, fading
To a dusky brown.

The Queen of Morn unbars her doors,
In far-off eastern skies,
Her presence-chamber seeks anew,
Where richest Persian dyes
Lie thick in forest and on field,
While all around is calm,
And low-voiced wind-harps softly chant
In restful, rhythmic psalm.

Cerulean heavens stretch away
Above a lustrous haze,
Rich autumn fragrance fills the air—
Too brief the hours and days.
And yet, when twilight shadows fall,
There comes, in swelling wave,
Quick grief that all this loveliness
Hangs o'er an open grave,—

A grave that hath not victory,—
Death without all its sting.
For rolling years have treasures yet
Which they will surely bring
To us when winter's reign is o'er.
In springtime's opening day,
When leaf and flower shall come again,
And new life lead the way.

—*Clark W. Bryan.*

A GROWL.

How we do get "taken in," occasionally, by the florists of whom we purchase plants! I don't mean by that that they charge too much for plants, or send out worthless plants, or do not fill the orders. Nothing of the kind. Most dealers, in my experience, have proved to be fair-dealing men, liberal and prompt, and having a pride in the reputation they have established for honesty and square-dealing, which is not only justifiable, but commendable. Where we get "taken in" is the general confusion that exists in their catalogues regarding the names of varieties of plants. For illustration let me give some of my experience this last year.

I ordered a Champion of the World Fuchsia from one dealer, and a Phenomenal from another. When the plants bloomed, they were exactly alike. I ordered a Safrano Rose from one dealer, and a Sunset from another. Both proved to be the same in all respects. Here there was a chance for dishonesty, since these two Roses resemble each other so much that the man who sent the Safrano might have thought he could pass it off on me as a Sunset. I ordered a Victor Hugo from one florist, and a Mad. Blanvelt from another, and no one can detect any difference in them. This is something that happens every year. If you order from the same firm all the time, it is not likely that you get the same plant, or variety, under two names, but if you order from some other firm, you do. Do florists buy up stocks of plants and give them a new name in their catalogues in order to make us think they have varieties that other dealers do not have? It certainly looks so.

Now I protest against this. It is not fair. It is not honest. I very often name a desirable variety in my floral articles, and often persons who read those articles send to a florist for a plant of that kind. If they happen to send to the florist my plant came from, they get one like mine, but if they send to another dealer, three times out of four they receive an entirely different variety. This is very provoking. It makes it necessary, in describing a variety, to say that it came from a certain florist. There is no dependence to be put in the nomenclature of the catalogues.

EBEN E. REXFORD.

NOVEMBER FLOWER STYLES.

The fashions of the late autumn are extremely rich and elegant: they are remarkable for simplicity, naturalness and grace, as they have been thus far since fall set in. Until Jack Frost nipped the wild flowers these were preferred to cultivated blossoms for personal decoration. Golden-Rod and Ox-eyed Daisies were worn in *bouquets de corsage* and brides selected the unaffected Michaelmas Daisies for the garniture of their robes. These flowers, by the way, bid fair to be very fashionable another season, for gardeners are bringing them under cultivation.

The blue and purple fringed ones are exceedingly pretty. At a very stylish morning wedding lately where the bride wore a travelling gown of mauve Irish poplin, her flowers were Golden Rod, Ox-eyed Daisies and purple Michaelmas Daisies.

CHRYSANTHEMUMS.

Single Dahlias have been very favorite this fall, but at present the flower that rules is the Chrysanthemum, which appears to hold the hearts of the community as firmly as heretofore. The largest decorations are made with Chrysanthemums; they are used for ornamenting the table, they are worn on the person, and carried in bouquets. Even their peculiar, frosty fragrance is esteemed delightful. There is a certain woody spice to them that is refreshing; and it is a reminder of the paths in the thicket which were odorous all summer of the same scents—a mixture of moss and marsh and tree-bark. The curious Japanese varieties of Chrysanthemums of crimson, gold, yellow and purple, many of them looking like tassels of fringe, are prepared for the corsage bunch. These are also arranged in the hair to be highly effective. Blondes choose the golden pompons, and brunettes wear those of deep red.

There are 700 varieties of this flower for sale in New York this season. Decorations made of the many shades and forms of yellow Chrysanthemums are superb. While those with the quilled petals are used for massing, the Japanese sorts are worked into the most gorgeous golden fringing. Church altars are magnificently embellished with Chrysanthemums. The tall standard plants are placed in the background, while the dwarf, bushy ones, spangled with their yellow balls, stand below. The railing of the chancel is cushioned with cut flowers.

DINNER TABLE DECORATIONS.

A very pretty and economical style of ornamenting dinner tables, is with grasses, either fresh or dried. Some species of *Agrostis* can be so arranged that they will look charmingly fanciful. Everlasting flowers (*Gomphrena*), with their rich colors of red, purple and creamy-white, are very suitable for mixing with light grasses. The center piece when these flowers are employed should be composed of Coxcomb's and Prince's Feather, which, when massed in a round or oval center basket, and fringed with greens or grasses, is unique and elegant.

ROSES.

Greenhouses are hardly in full blast as yet, although we are getting a handsome crop of the new Roses, Wm. Francis Bennett, and American Beauty. Never before have we had a large, red, fragrant Rose in autumn; the little Douglas, with its loose petals, has always been insignificant, and the Duke of Connaught, heretofore the earliest of winter-blooming Roses, is odorless. Our new red Roses are highly appreciated; it is prophesied that the Jacqueminot will never again be watched and waited for with so much eagerness as formerly, although neither the "Bennett" nor "Beauty" can compare with it in the velvet finish of its petals.

LILIES OF THE VALLEY.

Lily of the Valley was brought in very early from the greenhouses this fall and it has been the choicest white flower in the market. The wedding bouquets made of it are all flat in form, the sprays being so laid on the foliage as to radiate from the center. *Asparagus tenuissimus* combined with these Lilies is a light and lovely relief of green.

GARDENIAS.

The wax-like, sweet-scented flowers of Cape Jasmine are very fashionable for wearing in the hair. From three to five of these blossoms are placed in the coil of hair twisted on the top of the head; the effect is one of dignified grace. Gardenias continue to be the favorite flower for boutonieres.

DRESS GARNITURES.

All the ingenuity of modistes and florists is agitated to invent tasteful styles in dress garniture with natural flowers. The little Mignonette Rose and Carnations will be employed extensively for berthes and bretelles on account of their shape and size. Hinsdale Carnations, and the charming, rose-colored "Grace Wilder" Pink are quite the rage for edging the low or square-neck and short sleeves of ball dresses; in fact, the entire short sleeve is made of these flowers.

Lace evening gowns trimmed with long-stem Carnations are exquisite: these flowers are easily tacked on to lace with fine sewing silk, and the effect of stem, foliage and flower on the filmy fabric is lovely. A pink silk tulle dress garlanded on the over skirt and corsage with *Asparagus tenuissimus* is beautiful and fairy-like. The foliage of this Asparagus is durable and has a lacy elegance on tulle and light net material that is indescribably fascinating.

Crocus produce a charming effect when planted in small clumps in the lawn near the dwelling. All that is necessary is to lift here and there pieces of sod about a foot square, place about half a dozen bulbs on the soil, and replace the sod. When each one of these little clumps consists of but one color, the effect is far more pleasing than when all colors are mixed.

Hyacinths, Tulips, Narcissus, and all kinds of spring-flowering bulbs may still be planted at any time before the ground freezes, but the sooner it is done the better. There is nothing more pleasing and cheering in a garden than the bright spring greeting that a blooming bulb bed gives. When the soil remains frozen in day time, cover the bed with leaves and evergreen boughs.

AQUATIC HOUSES.

In conservatory building as in other branches of horticulture, new styles and devices supersede old and familiar ways. The latest development in this direction is the aquatic house; and soon all who can afford such a charming luxury will connect a miniature Lily lake with their greenhouses and conservatories.

Our illustration represents the aquatic house of Mr. J. M. Hodgson which stands among a group of grand greenhouses on the corner of Bellevue and Leroy avenues, Newport, R. I. The house is 120 feet long by 30 feet in width, and the tank which extends through its center is 100 feet long, by 20 in width, and is three and one-half feet in depth. In this tank many beautiful and curious species and varieties of day, and night blooming water plants are cultivated; from the ordinary White Pond-Lilies, to those superb pink and blue natives of the eastern continents. The specimens of white, night-blooming Water-Lilies from Brazil, *Victoria regia*, the flowers of which are 12 inches in diameter, have attracted marked attention this summer. The Sacred Lotus of India, *Nelumbium speciosum*, the leaves of which are, some of them, over two feet in diameter, also blossomed in this tank, as did *N. luteum*, the Yellow Nelumbo, or water Chinquapin.

There are but three aquatic houses in operation in the United States, although there are some in course of erection. Mr. Hodgson's house is a delightful exposition of how fairy-like and refreshing is a conservatory for water and rock plants in connection with a chain of greenhouses. At the right hand side of the front of the picture is a pyramid of rock work, among which are growing Ferns and Lycopodiums, Grasses, Cyperus, water vines, and blooming plants that thrive where there is moisture. This rocky mass is surrounded by specimen Draecenas. The side benches are covered with Gloxinias, the large, velvet-lined cups of which have made a gorgeous cushioning to these shelves. Tropical growth is distributed throughout the house as shown in our illustration.

There are three fountains in the tank, and it is illuminated from the top with green-hooded lamps, which shed a light peculiarly soft,—like moonlight,—and bestow a fantastic effect on this graceful scene, where the rich scents of night-blooming flowers and the sounds of "tinkling waters" add to the fairy-like surroundings.

Heretofore, those fond of water-plants have grown them in tubs, which are unsightly, and too contracted for any satisfactory collection. Mr. Louis H. Meyer of Staten Island, in two pools before his dwelling has grown a modest collection of Nymphaeas. Mr. Jay Gould in his Mosque Palm house, has a fountain where a few aquatic plants thrive. Mr. Charles J. Osborn has a small pool, which is fringed by water-growth, and a rockwork bank surrounding it. This is formed of peculiar rocks found in New York State, which are admirably suited for rockeries in aquatic houses. This is placed opposite an end of the building where the wall is entirely upholstered by Lycopodium, which is studded with groups of grasses, Begonias and Adiantums.

Aquatic houses, where they are lighted, so that Lilies that open in the evening may be watched and enjoyed, are excellently adapted for many night-blooming flowers, like the Jasmine and Cereus that are in their glory about midnight, when they throw out the most delicious fragrance. There are many persons who would appreciate the privilege of viewing the expansion of these magnificent blossoms under such charming conditions. The time is not far distant when aquatic houses will be among the delightful resorts of American gardens, where the night-blooming, as well as other interesting water-plants, may be studied.

Adjoining the Palm house in the new range of greenhouses of Ex-Governor Samuel J. Tilden, at Greystone, Yonkers-on-the-Hudson, is an aquatic house where the tank is to be sunk in the ground, and its margin embellished with water growth. All around the sides of the pool will be rock-work, which will provide ample opportunity for an extensive collection of mosses and other interesting plants that will flourish under like conditions.

South of New York many of the choicest water plants may be grown out-doors in summer. In the sunken parterre in front of the large Palm house in Fairmount Park, Philadelphia, are two large basins in which the beautiful lavender blue *Nymphæa scutifolia*, the pink *N. stellata rosea*, the bright red *N. rubra*, together with our native *N. odorata*, the dwarf Chinese *N. Pygmæa*, and many other charming aquatics thrive and bloom in luxuriance. The hardier kinds remain in their positions the year round, the basins being covered with boards in winter. The freezing of the surface of the water does not injure them, all that is necessary is to prevent the roots from becoming frozen. Very tender species are taken up in the fall with their roots entire, planted in tubs and wintered in a greenhouse. At Bordentown, N. J., Mr. E. D. Sturtevant has grown *Victoria regia* in an out-door tank, treating it like a tender annual.

The establishment of aquatic houses, and the awakening of an interest in the fanciful growth that is suitable for proximity to water, will undoubtedly lead to the beautifying of many much neglected brooksides and water courses on estates otherwise finely cultivated.

Newport.

THE AQUATIC HOUSE OF J. M. HOOGSON, ESQ., OF NEWPORT, R. I.

Fruits.

SEASONABLE HINTS.

During the mild days of early November, trees and shrubs may still be planted where the soil is dry, and there is no danger of water standing during winter. The later in the season a tree is planted the more carefully should the work be performed; in exposed situations the stems should be tied to stakes to prevent their becoming bent or blown over by winter storms.

Heeling-in.—Being aware of the frequent delays in obtaining nursery stock ordered in spring in time for planting before the rush of work begins, many fruit growers prefer to order what trees may be wanted, in the fall, and to heel them in carefully, so as to have them at hand in good season next spring. This is a good plan, which not only saves time and vexation but insures better success. The holes in which the trees are to be planted may be dry at any time before the ground freezes: the frost will pulverize the soil thrown out, and in spring the trees may be planted at the earliest opportunity, without exposing their roots more than a few minutes.

Raspberries and Blackberries should, whenever feasible, be planted in autumn, the canes be cut off to within a few inches from the ground, and some coarse manure be scattered along the rows.

Grape Seed may be sown at any time before the ground freezes. Only seeds from the ripest and most perfect bunches and berries should be selected. The seed bed should be made rich and mellow; the seed be covered with about one inch of soil, and in winter be lightly mulched with leaves. Or the seed may be washed out, dried, kept in moist soil during winter, and planted as early in spring as possible. The seed should be sown thin enough that the young plants may not crowd each other. When a year old the seedlings have to be taken up and transplanted in rows, allowing them sufficient space for full development.

Cleaning Cider Barrels.—The best time for cleaning a cider barrel is immediately after its contents have been drawn off. When the sediment has once become dry and hard, and has formed a crust in the barrel, it is exceedingly difficult, and often impossible, to so thoroughly clean a barrel as to make it suitable for first-class cider. The most effectual way to clean a barrel is to take out one of the heads, and scrub all the inner side of the barrel thoroughly with boiling water, and after the head is replaced to burn some sulphur tape in it. With musty casks it is of no use to spend any time: they can never be completely cleaned again, and will spoil vinegar even. The best use to make of them is for swill or fire wood.

From the returns to the Agricultural Department it appears that the Apple crop is little, if any, above that of an average "off" year. The exceptions to this are those orchards where from spring frosts or other causes, the yield of last year was deficient. This was the case in New England, especially in Connecticut and Rhode Island, and as a consequence a full, medium crop was gathered there this year.

STANDARD CURRANTS.

To many persons Currant bushes appear as fit companions only to brambles and weeds in neglected fence corners, and the suggestion to grow them for ornament may seem somewhat startling. Yet well trained Currants and Gooseberries are highly ornamental and useful as well, and form beautiful objects in the mixed borders.

Training Currants in tree form should begin with the planting of the cutting, by removing every bud but the upper one, so as to throw all the strength into the terminal shoot. If a low heading tree is desired this

A STANDARD CURRANT.

shoot is cut off the second year, at a height where all the branches are to form the head. Not more than four upper side shoots should be allowed to grow. The following year these are also cut back, and each succeeding year the strongest shoots have to be shortened in, the superfluous ones and old wood cut out altogether so as to maintain an open, well-shaped head. If a higher stem is desired, the terminal growth has to be encouraged for two or three years, cutting off all side branches every year from time to time until the proper height is reached. Somewhat more care is necessary to train Currants in tree form than in a bush, but the principal reason why it is not more frequently practiced is that when the Currant borer gets into the stem the whole tree is lost, while in the bush the loss of one or more shoots is of comparatively little consequence, as others will soon take their places. Some of the hardier species, however, *Ribes aureum*, the Missouri Currant, especially, are almost entirely exempt from the attacks of the borer, and by using these as stocks for grafting the improved varieties upon them—similar to the methods employed in producing standard Roses—the danger from borers is reduced to a minimum. To amateur fruit growers who have never seen Currants trained in this manner, experiments in this direction will afford much interest and fascination.

LARGE PROFITS.

How $1,295 net Profit per acre of Strawberries were made by P. M. Augur & Sons.

Within a stone's throw from the Middlefield Center, Conn., Station on the "Air Line" Railroad lies the now famous "Jewell" Strawberry patch of Messrs. P. M. Augur & Sons. Having visited the place the past season, just before the general picking commenced, and having then and there beheld the most abundant crop of Strawberries we thought we had ever seen, we became much interested to learn the details of cultivation and the amount of the profits derived from the plantation, which information was cheerfully given by the proprietors.

The bed measured one twenty-second part of an acre—as we know from actual measurement. In 1882 it was in grass, and yielded at the rate of half a ton of hay per acre; in the spring of 1883 it was turned over smoothly, and about two cords of good stable manure spread and harrowed in with a La Dow harrow; then planted as a kitchen garden. In the spring of 1884 another cord of fine stable manure was spread, and the ground sowed with Peas; a dressing of about four bushels of ashes was applied to the soil at the same time.

After the Peas had been harvested the ground was well plowed and planted with Jewell Strawberry plants, twenty-six rows two feet apart, each row containing twenty-six plants 18 inches apart. Every fifth row was a bi-sexual variety not included in the manured area, nor was their yield counted with the Jewells. The plants' ordinary layers were set out the first week in August. Ashes, hen manure and a compost of leaf mould, lime and ashes were scattered between the rows and hoed in.

The plants were hoed eight times before winter and the runners cut at each hoeing. When the ground froze the plants were mulched with coarse hay. About May 1st the mulch was removed and the ground skim hoed; after blooming and when the first fruit had fully set, the mulch, or a part of it, was replaced between the rows.

The yield was 678 quarts of large, beautiful berries, exclusive of those sampled by hundreds of visitors, and the many quarts given away to various persons and exhibited at fairs. Now as the average price received for the berries was sixteen cents per quart (some sold for twenty-five cents), the to-

tal amount would be $108.48 for one twenty-second of an acre. The figures are as follows:

Gross returns,		$108.48
Picking,	$13.56	
Marketing,	5.00	
Setting plants,	1.50	
Plowing and hoeing,	4.50	
Stable manure chargeable,		
To Strawberries,	16.00	
10 bush. ashes,	2.50	
10 bush. hen manure,	3.00	
Leaf mould, ashes and lime,		
Compost,	3.00	
Interest on land,	.55	
Total expenditure,		49.61
Net profit 1-22 acre,		58.87
Rate of profit per acre,		1295.14

No charge was made for the plants set out, as the young plants produced this season far more than compensated for the original stock; and the prospect for a crop another year from the old plants is excellent.

COCOANUT CULTURE IN THE UNITED STATES.

When visiting Southern Florida three years ago I found among the Keys and along the Atlantic Coast a number of Cocoa Palms growing vigorously, and producing a full crop of fruit. These trees have undoubtedly sprung up from nuts that have been washed ashore. The largest ones, shown in our illustration, are twenty-five to thirty years old, and stand about seven miles north of Cape Florida. The habitation under the trees was built by Mr. Lum, formerly of Sandusky, O., from drift lumber found on the beach, and thatched with Palmetto leaves. The fact that these and other trees in this region and in Key West are succeeding so well without any care whatever, suggested the thought of the feasibility of Cocoanut culture in the United States, and the desire to investigate the subject more closely.

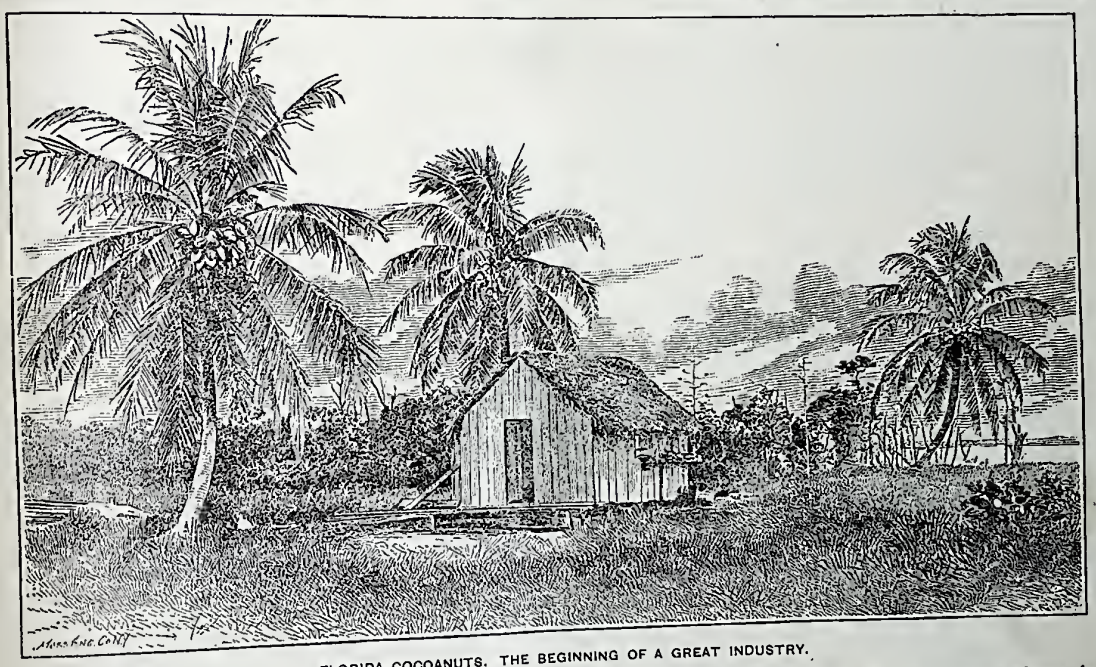
There is hardly a tree or plant more extensively and variously useful than the Cocoanut Palm. The wood is used in some parts of the world for building purposes, for furniture, and ornaments. It is known in commerce as porcupine wood, and is susceptible of a high polish; the leaves are used for thatching, habitations and other buildings. The husk contains twenty-five per cent fiber, which when separated is used in the manufacture of cordage, rope, bags, and matting, and for upholstering mattresses, etc., while many of the brushes now in common use are made of fiber obtained from the leaf and husk. The shell is used for making cups, dippers and vessels of like uses, a vegetable charcoal can be made from it, and it is also ground and sold under the name of spice mixture. The kernel supplies food to many of the human race. In the tropics it is generally used while in the soft or jelly state, eaten with a spoon. The milk or water is transparent until the kernel is formed, and hard when it becomes white or milky in color. While this transparent state exists the water is used for drinking to a great extent, taking the place of spring water. Oil is extracted in large quantities and forms not a small item of the world's commerce. The spathes are tapped and the juice of the tree drawn and manufactured into jaggery and arrack.

The entire area devoted to the growth of Cocoanuts in tropical America, Asia and Africa is estimated at over three million acres, with an annual product of about ten thousand millions of nuts. Along the coast of Brazil are Cocoa Palm groves 300 miles in length, whence eight millions of Cocoanuts are annually sent to the United States, while large quantities come from the West Indies and other countries.

A temperature of from 65° to 90° is required for the best growth of the tree, but it will grow successfully at considerably lower and higher temperature occasionally. It thrives best in porous coral sand, and the more decayed vegetation there is on it the better; the coral or lime soil contains all the requirements needed, and when another is chosen the deficiencies must be supplied. To a clayey soil sand and ashes or lime must be added in large quantities, and even then the trees will not grow nearly so fast, nor will they commence bearing so young or so well as in naturally adapted soil. A location along salt water is proved to be the best, the closer the water's edge the better. The most successful groves are in coral formations, situated in or along the track of warm currents of water. The bearing age commences at from four to seven years on a coral sand along the sea, while in the same country a short distance inland, a tree requires double the time to arrive at the producing age. The number of nuts per tree varies from forty to 200 annually; one hundred to the tree is a fair yield. In favorable locations cultivation is not needed, as the young plant likes partial shade, which native growth readily supplies. All that is required is to plant the nuts where the trees are to remain, as they do not bear transplanting. The seed nuts should be large, fully matured, and be planted in the natural state, that is with the husk undisturbed, and covered with about three inches of soil.

The first attempt at Cocoanut planting in Florida was made during my visit there, three years since. The following winter one hundred thousand were planted, last winter a still greater number, and another large planting will be made during the coming winter. The success so far has been all that can reasonably be expected; and although the area suitable for Cocoanut culture in Florida is comparatively small, its favorable soil and location make it as desirable for the purpose as the most favored spots of the tropics, with the additional and inestimable advantage of as healthy a climate as exists in that latitude.

E. T. FIELD.



FLORIDA COCOANUTS. THE BEGINNING OF A GREAT INDUSTRY.

PACKING AND SHIPMENT OF FRUITS.

BY PARKER EARLE.

In commercial fruit growing the preparation of fruit for the market is of great importance. If we grow merely Apples, Pears and Peaches, it matters little what kind of crates or barrels we ship them in. Suppose, though, that our fruits have been allowed to ripen, have been kept from worms and bugs. In that event the man nearest to a good market is the happiest by far. Any kind of crate will do in such cases. To this class very little need be said. To those, however, who grow fruits at a distance, as the tender berries grown in the South and sent North in February and March, we in the North receive such fruits. These berries are sent

from Florida to New York, Chicago and even to distant Winnipeg. How is this? Such fruit had never been heated; it had been kept in refrigerators all the time from Florida to New York in artificial contrivances, while the natural climate from there on is cold enough to keep what in hot weather would not keep over night.

So, also, with fruits from California. Apricots, Nectarines and Peaches, which are very tender and perishable, come through sound and in good condition. I have seen them as far east as New York and Boston. In the first place the fruits grown in California were carefully cultivated. Owing to climatic causes, they have received no attacks from insects. When nearly ripe they are carefully gathered, wrapped in paper and sent with great care on the journey in various directions. Hence, many fruits which we despair of growing are shipped all over the country from California. Surely we are not making use of transportation and this method of marketing our goods.

A good deal of care must be exerted in packing. The half-bushel drawer used in our country, Ohio and Indiana, is a bad arrangement. No box could be more ingeniously contrived to spoil berries than this one. The boxes are rolled over and over and the berries made to leak. The quart box or baskets packed in an open crate are the best contrivances I know of, especially for good weather or refrigerator cars. I don't mean the Michigan quart box; that is too deep. The measure is accurate, but it don't carry berries as well. When placed in the crates the aggregate box is so nearly square that one cannot tell when it is upside down or right side up. A better crate is one built so as to obviate this trouble.

Raspberries should be shipped in pint boxes packed in cases containing 24 boxes. I have no difficulty in shipping tenderest varieties 600 miles and having them arrive in fairly good shape. This could not be done in large packages.

The crate used in the Eastern States for Peaches is improper. It is ingeniously adapted to spoil fruit. The Delaware Peach basket is too large for shipping ripe Peaches. The Michigan Peach basket is a receptacle of great merit, but is not quite the thing. I would prefer an oblong package like the Michigan Grape basket. This will do for markets near and far.

The so-called "Ripe Fruit Carrier" is the best contrivance for that purpose that I have ever seen. A few days ago I received one of these carriers filled with Peaches picked three days before they reached me. On opening the box and removing the fruit, I found them to be in a state of remarkable preservation. On one or two were slight bruises, which by examination I readily recognized as being made by falling from the tree on which they were grown. On one or two others some traces of earth were visible, showing that they had been picked off the ground. We all admired the Peaches at home, and I have brought three of them over here for the inspection of the gentlemen present. Of course I chose the firmest among the smallest Peaches. You see that they are almost perfect. They were picked eleven days ago. (The fruit was examined and found to be remarkably well preserved.) The box is filled with perforated pasteboard trays, so arranged by divisions that each Peach is in a little cell and entirely separated from contact with the others. The box holds 100 Peaches. The patent is on the ventilation, since the arrangement of trays is not unlike that in the well-known egg carrier. By packing in this way I believe that Peaches could be transported as far as from Michigan to England, and there is no reason why even more remote distances cannot be reached by packing still more securely, as in tissue paper or cotton. The crates cost about 30 cents each.

It seems desirable to me in shipping fruit to avoid express companies, not wholly to save expense, but to avoid the almost universal rough handling and confinement in hot cars. The result of a long experience on my point is to avoid express companies. The Illinois Central R. R. has furnished us with good, well-ventilated cars. I believe they are the best ventilated fruit cars I ever saw. But still it is very hard for us to ship successfully during hot weather. Fruits must be kept cool, not cold, a temperature of about 50°. I have never had any failure in using refrigerator cars. The following conditions are worthy of notice. Don't have your fruit hot when it is put in the car. Have it cool either before or see that it is cooled after put in, but before it goes.—*Read before the American Pomological Society.*

FRUIT GROWING NOT DESIRABLE FOR EVERYBODY.

It is a wise provision that each member of the human family is peculiarly fitted for some specialty. Some of our fellows take pleasure in running engines over iron rails, others in mining coal or iron, others in sailing ships, and others in figuring in offices. There are more who have a taste for horticultural pursuits than for any other calling, but horticulture is divided into many departments, each of which is adapted to the different tastes and peculiarities of individuals. Fruit growing is as different from ordinary farming, as one kind of business in the city is from another. Fruit growing calls into use different abilities than those required for ordinary farming; it requires more business ability, more tact, greater promptness in action, more patience, more perseverance, and a wider range of information.

There has been too much indiscriminate advice to undertake fruit growing, and many who own large farms have attempted to add general fruit growing to their business of farming, dividing their attention between the two pursuits. My experience would not lead me to take such a course as this, for fruit growing demands prompt attention, and either the farming or the fruit growing would in most cases be neglected, perhaps both. More especially is this the case with small fruits, for Strawberries and Raspberries are ready for harvesting at just the time when the grain harvest and haying commences. If you have several acres of Strawberries and Raspberries to market, you have little time to watch the hay fields, or the ripening grain, both of which are exacting upon your time and attention. If the farmer has a son, who will take the entire charge of the fruit department, leaving the father's hands free to attend to the farming, fruit growing may be conducted successfully on the same farm. Farm work is exacting and demands great attention and diligence, but fruit growing demands far more.

Few farmers are aware of the amount of experience required in farming. They have been born and bred on the farm, and have accumulated information gradually on the subject of the requirements of ordinary crops, the application of fertilizers, and the gathering and storing; and they do not realize how ignorant they would have been on these subjects if called on to manage a farm without having had any experience whatever. Therefore, such men do not appreciate the amount of knowledge necessary in fruit culture. It is a fact, that the experience one has secured in farming is of the greatest help in fruit growing. A good farmer may be said to have about one-half enough experience with which to begin fruit growing. That is, he would have that advantage over a novice who has had no experience in rural affairs. But the best farmer has much to learn before he can grow fruit successfully and without danger of failure.

The first mistake a farmer would make in attempting fruit culture would naturally be in the selection of varieties. It requires the largest experience to know just what to plant in certain localities. If the farmer had some experienced friend in his immediate locality, on whose advice he could rely with confidence, he might be aided in this regard, but usually he does not appreciate his ignorance on the subject, and, relying upon his own judgment, makes serious blunders. It requires considerable experience to be able to decide which field of the farm to devote to certain kinds of fruits. The novice is almost certain to select the wrong field. While an elevated site can almost always be recommended for fruits, the novice will be pretty certain to select low, moist, dark-colored soil in preference to the upland.

It is difficult for the novice to see the importance of giving his plants and trees plenty of room. In planting, he marks out his ground perhaps with an ordinary corn-marker, and as he sets his Raspberries and Blackberries in these rows, it appears to him that three feet and one-half may be ample space. He is not able to look forward in his imagination to the time when each Blackberry and Raspberry row will cover an expanse of four or five feet, thus demanding seven or eight feet space between the rows. It is the same with Grapes, and with fruit trees generally, most beginners planting these too closely together. When I began fruit growing I made the same blunders. I remember in planting black Raspberries seven feet apart, it seemed to me that there was too much waste ground between the rows, and having some Pear stock which I desired to feed, I foolishly planted them between the rows of Raspberries. All went very well the first year, but the second I could scarcely see my Pear seedlings. By great perseverance in shortening in the Raspberries, I succeeded in getting a fair stand of Pears, but it was a foolish operation. The wiser course would have been to have left the vacant row between the Raspberries unplanted, or planted to early Potatoes or a similar crop. Small fruit growing is specially desirable

for the man who has only a few acres of ground. There are many people who have only from one to ten acres; and who have no money to buy more land, but desire to make the most of what they have. Such persons cannot do better than to occupy the ground entirely with Strawberries, Raspberries or Blackberries, making the land very rich. Usually there are children to help gather the fruit, and the labor can be largely performed by the owner, if he has no other business to occupy his attention. The best success is usually secured by persons of this class, all the proceeds appearing to count as profit, as they incur no outside expenditure. Not having a large amount of any species of fruit they dispose of it all, they can pick in the best possible condition, and get the highest prices, thus competing successfully with the large grower, and often making more money than the latter. Strawberries especially I consider the poor man's berry, from the fact that any poor man who has from a quarter to an acre of soil, may by industry and skill grow enough fruit to assist materially in maintaining himself and family.

CHARLES A. GREEN.

Rochester, N. Y.

UNDERDRAINAGE.

Underdrainage may be a good thing for the market gardener, but it is of doubtful value to the fruit grower; and notwithstanding the claims made for it, the natural drainage of a high, rolling spot should always be preferred.

Underdrainage equalizes the amount of moisture in the ground. If there is an excess, the drains carry it off; while they have such an effect upon the soil that it retains more moisture in a dry time. Hence underdrainage indirectly reduces drought and directly reduces excessive moisture. It follows that it makes more equable the temperature of the soil. Water is of a more equable temperature than earth, receiving heat more slowly and giving it off less readily. Hence whatever equalizes the water in the ground also makes more equable the temperature of the ground. So far underdraining is beneficial to plant growth. It is beneficial, also, by reason of the effect it has upon the soil—deepening it and fining it, thus increasing the amount of plant food and making it more readily available. The well-known effect of underdrainage upon the season of growth—to begin earlier in the spring and continue later in the fall, and caused by the change made in the texture, temperature and humidity of the ground and therefore in the temperature and humidity of the air above this ground—is also favorable to greater yields.

Taking up the effects of underdrainage one by one, it is easy to see that they may be of benefit to the gardener, and impossible to reasonably suppose that, save in exceptional cases, they would do him hurt. A respectable part of the profit of gardening depends upon early growth, since the vegetables first in the market are the ones which bring the highest prices; and the ability to prolong the growing season is of scarcely less advantage. Other conditions being the same, the gardener who has underdrained his land will make more money than the one who has not, for he can not only grow more, but he can get his early vegetables earlier to market, and keep the market supplied to a later date in the fall. Though the gardener have high ground, the natural drainage of which is excellent, he will very likely find underdrainage profitable; for it will deepen the soil and improve its texture, lengthen the growing season and make it productive of better results, and mitigate drought, though there is no need of it to carry off an excess of water. The gardener should never forget that underdrainage mitigates drought as well as flood. This fact is too often overlooked by many who suppose that the effect of drains upon the soil is only to carry off a surplus. They retain moisture in a droughty period as well.

But it is certain that underdrainage does not do so much for the fruit grower as it does for the gardener, and it may well be doubted if it is of any real benefit to the pomologist at all. In so much as it improves the condition of the soil and makes its plant food more readily available, and so far as it makes the seasons more favorable to growth, it is of undoubted benefit; and, unless the matter were considered in all its phases, a person would be led to suppose that its effect upon the temperature and humidity of the soil and air would be a great benefit to the fruit grower. But a little investigation will show that instead of this being a benefit it is a positive injury. We see that one result of it is to lengthen the growing season by making it begin earlier in the spring and continue till later in the fall. It affects to a certain extent the temperature locally, keeping off frosts later, but it cannot have any appreciable effect upon strong tendencies to change on the part of the air, nor can it ward off those cold waves which lower the temperature 30° or 50° in a few hours.

What is the result? The fruit trees, berry canes, and Grape vines are coaxed to grow till late in the fall; they are full of sap, and tender; and they are caught by a cold wave and injured far more than they would have been had their growth declined earlier. In all parts of the country great damage is done to fruit trees, shrubs and vines, by the growing season being terminated by sudden and severe cold. In the West, at least, this destroys more fruit trees than all other causes combined. There is so much sap in the trees that its expansion by freezing bursts the bark loose from the trunk and larger branches, and in some cases splits the trunk. Underdrainage, by coaxing the trees to grow later in the fall and yet being unable to ward off cold waves, increases the evil; and this alone would make underdrainage of doubtful value in many localities.

Again, our fruit crops are frequently destroyed by hard frosts after the leaf and fruit buds have swelled and perhaps opened. The local temperature has been warm enough to coax the buds to expand and then a cold wave destroys them. Underdrainage by coaxing the buds to waken earlier in the spring, would increase the chances of the loss of the fruit crop. Underdrainage not only threatens the trees but their fruitfulness also after they have passed through the winter. And because of this I think the fruit grower (for this applies to vines and shrubs as well as to trees) would better depend upon the natural drainage of high land. Such land will be more free from frost than low land well underdrained; and upon it the trees are not led to grow too late in the fall or to begin growth too early in the spring.

JOHN M. STAHL.

THE LARGEST GRAPEVINE.

Though the largest Grapevine in the world is claimed to be at Hampton Court, England (a *vinifera* variety), and another is claimed by Santa Barbara, Cal. (a Mission Grapevine), yet I believe the farm of Jesse Tarlton, seven miles from Lexington, Ky., has the best right to the honor of possessing the largest Grapevine, at least in size of body. I measured it at six feet from the ground and found it 66 inches in circumference. It is of the *cordifolia* (Frost or Winter Grape) species, and is probably 200 or more years old. It is supported by an Elm nearly three feet in diameter, which it entirely covers, and shows vigorous growth in many branches, though partly dead on one side near the ground, caused by exposure to the sun and trampling of stock.

A vine of the same species, reported in newspapers of Fla. a few years ago, having a circumference of 69 inches, has always been regarded by botanists as a "fish story," so Kentucky must now bear the palm till good authority from elsewhere shows a circumference of body over 66 inches, six feet or more from the ground.

T. V. MUNSON.

NORTHERN EXTENSION OF VITIS AESTIVALIS.

During my recent visit to Kentucky and Michigan, writes Prof. T. V. Munson of Denison, Texas, I found that the æstivalis species of Grapes—of which Norton's Virginia is an example—extends to about 45° in Michigan, which is some 3° or 4° further north than in any other section known, and hence the early ripening varieties of this species, of which several fine ones have recently been found, are likely to succeed well in Michigan.

It also appears that in a limited section near Lake Michigan, in Michigan, the Labrusca species has been found native, the only place west of the Alleghanies.

SHORT CUTTINGS.

Rot has destroyed the greater part of the Kelly Island Grape crop this year.

Cranberries are a short crop this year. In Burlington and Ocean Counties, the great Cranberry center of New Jersey, the fruit is badly scalded, and the yield will not be over twenty per cent of the average.

The largest Orange trees found in Florida are in Hillsborough, and are said to have been planted by settlers who took advantage of what was known as the "armed occupation" laws. Some of these trees have for years produced 10,000 Oranges.

The climate of Washington Territory offers excellent facilities for fruit growing. Some specimens of Early Crawford Peaches received from C. W. Shane, Toledo, Wash. Ty., were as fine as any we ever saw of this variety.

Vegetables.

SEASONABLE HINTS.

Harvesting crops that may still be in the ground, gathering decaying vines and rubbish, raking up leaves, bringing under shelter Bean poles and Pea brush, and cleaning and tidying the grounds generally, are now in order. But nothing adds so much to the neat appearance of a garden during winter than to have it plowed or spaded up before the ground freezes.

Fall Plowing not only improves the appearance of a garden, but it ameliorates the ground materially, and fits it for earlier cultivation in spring. For the amount of labor and expense devoted to it, hardly anything brings so great a return as fall plowing or spading, especially on heavy or wet soils.

No implement can mellow and pulverize the earth nearly as thoroughly as frost does; and if the plowing is done in narrow lands, with deep, open, intervening furrows running with the slope of the land—as it should be whenever practicable—the additional benefit derived from surface drainage is of no small account.

Parsnips and *Salsify* not required for winter use may be left in the ground without injury, yet in the Northern States a light covering of leaves or stalks will generally preserve them in better condition. Where no suitable winter storage can be had, a part of the row or bed may be covered thick enough to exclude frost, thus enabling one to dig the roots at any time.

Improving Varieties.—"Plant the most mature and perfect seeds of the most hardy, vigorous, and valuable varieties," has been President Marshall P. Wilder's injunction for many years, in regard to the improvement of fruits. It applies with equal force to the improvement of vegetables, as instanced by the following experiment:

Last fall we selected seed of Caseknife Beans from pods having six or more seeds in each pod. This year the crop showed a marked improvement, six, seven and eight-seeded pods being common. The selection has now been made from pods having not less than eight seeds, nine-seeded pods appearing frequently.

Keeping Onions.—The principal requisition for keeping Onions in good condition during winter is dryness. If kept in a dry place, they are not easily injured by frost, provided they are not handled while frozen. Packed in barrels with any kind of chaff, or finely cut straw, they will winter safely in a barn or any out-building. Ordinary cellars are too damp for Onions.

Asparagus stalks should now be cut off and burned, and a liberal coat of manure be spread over the rows. Manuring at this season has a much better effect upon next year's crop than if deferred till spring. The same applies to Rhubarb.

Cold-frames should be covered only during freezing weather. The principal cause of non-success with cold-frames lies in their being kept too much closed.

Cabbages keep better if not pulled till cold weather sets in, but care should be taken to prevent their becoming frozen hard, as this injures their keeping quality considerably. Market gardeners ep them out-doors, covered with soil.

MARKET GARDENING IN THE SOUTH.

History.—Social Questions Involved.—Growth.—Locations.—Soils.—Methods.—How to Grow the Different Crops.—Some Great Successes.—Causes of Failure.

BY DR. A. OEMLER.

PRESIDENT CHATHAM COUNTY TRUCK FARMERS' ASSOCIATION.

First Paper.

About the year 1840, the Hon. Mark A. Cooper and Dr. W. C. Daniell of Savannah, imported each a German to manage their private gardens. As soon as the latter (George Ott and Nicholas Wolff) learned to appreciate their capabilities and the opportunities presented by their new surroundings, they left their employers, located in the immediate vicinity of Savannah, and engaged in the cultivation of vegetables for the local market. In so far as Savannah is concerned they were the pioneers in truck farming. Both acquired competencies. The former died in Savannah years after he had retired from active work, while the latter still lives in comfort at Wiesbaden, Germany.

Previous to 1856, when, abandoning the practice of medicine, the writer commenced truck farming, no crops except Watermelons were exclusively planted for the northern markets. Small shipments were made, however, of the surplus of the local market crops. Nor had any large consignments of Melons ever been made, nor a crop ever been grown in Georgia, nor probably elsewhere at the South, expressly for northern markets prior to 1852. A few may occasionally have been sent to New York by fruit dealers, to fill orders.

In 1851, Mr. E. B. Barstow of Wilmington Island, placed on board the packet barque, Isaac Mead, about fifty fine Melons for the consumption of a party of our relatives during the voyage to New York. Only a few of them having been used during the quick trip, the balance were presented to the captain, who sold them at such high prices, that Mr. Barstow, induced by the evident demand, planted the first crop for shipment in 1852. Notwithstanding many drawbacks, the venture resulted so satisfactorily that two other Sea Island Cotton planters, R. T. Gibson and W. R. Pritchard, of the neighboring islands of Whitmarsh and Skidaway, respectively, were tempted to follow suit the next season. Outrageous stealages in transit (not yet even completely abated on some transportation lines) made it advisable to entrust the shipments to the care and custody of captains, or persons who disposed of them for one-half the net proceeds. When communication with the North was interrupted at the commencement of the war, W. R. Pritchard had 60 acres in Melons.

General shipment of vegetables increased annually, but the truck interest could never have reached its present importance, but for the result of the war. Emancipation, or the death of slavery, has certainly been, so to say, the birth of truck farming on an extensive scale along the South-Atlantic and Gulf coasts.

Under the old order of things large truck crops would have been impossible, as one of the chief requisites to the successful pursuit of this industry, is proximity to the point of shipment and source of manure supply, or the vicinity of the larger coast cities. Several farmers near Savannah employ one or two hundred hands during the picking season. J. R. Young had 150 acres in Strawberries near Norfolk, Va., in 1879 and employed about 1000 hands during the harvest. He put in an additional 100 acres the following year. From 4000 to 5000 bushels were then being daily picked in the neighborhood of Norfolk, and as each picker averaged about one bushel, it follows that a force of from 4000 to 5000 hands was required to gather the fruit.

The only plantations in the vicinity of Savannah with large labor forces, were those of the River Rice planters and none of the negroes could ever have been hired. I was the largest slave-owner engaged in vegetable growing, and at no time could I have made available for field labor more than twenty-six adults, the remaining forty being children or mechanics and house servants. Ex-Governor Hammond's prediction, that "in case of emancipation the negroes would seek the towns, and rapidly accumulate in groups upon their outskirts;" has certainly been verified, and it is the better element of this population which is willing to do some work, and supplies the truck farmers with the necessary labor during the busy season of gathering their crops.

This industry has gradually developed into astonishing proportions, especially in the vicinity of the larger seaport cities of the South. Where favorable conditions are wanting it is pursued less successfully, and with a more limited variety of products, as is the case inland along railroads and in Florida. Market gardening affords support, and in not a few cases more than a mere competency, to many farmers along the South-Atlantic and Gulf coasts from Norfolk to Mobile, and furnishes sustenance to a population that would otherwise either steal or starve.

During that period of the year when the planter is often without ready cash, many of those along the railroads, who cultivate Melons, or other truck, as an adjunct to their cotton crops, rejoice over the net proceeds of their shipments, although these would be quite unsatisfactory to the special truck farmer. During the season of business stagnation at the South, the movement of their truck crops, and the inflow of money in return, tends in the early spring and summer to enliven southern coast cities. Finally the income resulting therefrom to the various transportation companies, on land and sea, is of very great importance at a season when other freight would not pay the expenses of their northward trips.

Chatham Co., Georgia.

A SECOND CROP OF PEAS.

My American Wonder Peas have excelled themselves this year, yielding two very good crops. I have often noticed—as I suppose others have done—that soon after picking the green pods from the vines, a new growth would start from near the roots, produce blossoms, but seldom pods fit for use. The plant becomes so exhausted in the effort to produce another crop that, unless special stimulants are given, it dies in the effort. This suggested the idea that under favorable conditions and proper care a second crop might be grown profitably, and this year's experience confirmed the correctness of the supposition, to our great pleasure.

Early in spring American Wonder Peas had been sown along side of a furrow in which a good quantity of yard manure was buried. Soon after the first crop had been gathered, which was a very good one, we had abundant showers; new, vigorous branches appeared almost immediately and produced an abundance of blossoms and Peas, more I thought than the first crop. The pods were generally smaller, and the number of seeds in them less than in the first picking, nevertheless I harvested three bushels of good seed Peas from this second growth. In this case all conditions seemed to have been favorable, and new roots have probably pushed forth into the near-by manure, but I have no doubt that even under ordinary circumstances, liberal applications of liquid manure at the proper time would produce similar results.

H. J. SEYMOUR.

EARLY NEW ZEALAND POTATO.

The specimens of this new Potato sent us, and from the most characteristic of which our illustration was drawn, were large, handsome tubers of oblong-oval, flattened shape; skin light pink, roughish; eyes even with the surface, or slightly raised, never deepened. Even the largest specimens were solid to the core and of the best cooking quality.

This variety, the introducer states, originated on the island of New Zealand and was introduced into the United States in 1882; its growth of vines is strong and vigorous, foliage large and dark green; blossoms abundant; season extra early, keeping quality unexcelled, and its yield immense. He lays special stress upon the importance of planting single eye sets.

EARLY NEW ZEALAND POTATO.

THE DEACON LETTUCE.

In the August number of THE AMERICAN GARDEN, "Elm" of the New York Experiment Station gives a very interesting account of the experiments made at the Station with 150 varieties of Lettuce. At the head of the list he places "The Deacon."

"All in all," he says, "this is the finest heading variety we have grown. Introduced by Joseph Harris. This is one of the dark-green, thick-leaved sorts. Nearly all of them are of good quality. Head compact, rounded or a little flattened when of full size and in some plats measuring full five inches in diameter. Outer leaves few in number, which with the perfectly defined head, give the plant a very distinct appearance."

This is an accurate description of the Lettuce under consideration.

"I have been surprised," he adds, "that this superior variety has not appeared under any other name."

The history of this Lettuce is as follows:

Living near me on a small farm is Mrs. Müller. For many years she and her husband were successful market gardeners in Irondequoit, southeast of Rochester. The family moved into my neighborhood. The husband died, and my good friend and next door neighbor, Deacon Bushnell, was able to aid the widow in settling up affairs and saving the farm.

Mrs. Müller was grateful.

She had a variety of Lettuce the seed of which she would neither sell nor give away. As she passed by the deacon's farm on her way to the city with vegetables, she would leave him a head of this Lettuce and finally gave him some seed.

There is nothing that pleases the deacon better than to beat me and then laugh at people who write for the papers.

The deacon often told me about the wonderful Lettuce that Mrs. Müller grew. I confess to have had little faith in it. It did not seem probable, I thought, that a woman living out here in the country on a cross-road, working her small farm and garden with her own hands and taking her vegetables to market and peddling them out in the city, should have a variety of Lettuce better than could be got from Vilmorin of Paris, Benary of Erfurt or the Carters of London. We had the best varieties of the best seed houses in the world, and it was not likely that Mrs. Müller could have anything that was superior.

"Well," said the deacon, "have it your own say."

I had my own say. We sowed many different varieties of Lettuce,—French, German, English and American, but the deacon beat me every time. Finally Mrs. Müller let me have a few ounces of seed, and then, by the aid of plats of manure and superphosphate, sowing in rows 21 inches apart, and thinning out the plants six or seven inches apart in the row, *I beat the deacon.*

I have grown this Lettuce and sold the seed for several years. But so far as I can remember, the article by "Elm" in THE AMERICAN GARDEN is the first notice it has received from any agricultural or horticultural paper.

I have just been to see Mrs. Müller. I found her and her daughter digging Potatoes. I told her that the New York Experiment Station had tried her Lettuce, and out of 150 varieties with 700 different names, her Lettuce proved to be the best, and I wanted her to tell me all about it.

Ques. How long have you grown it?

Ans. Over forty years. I am an old woman, I shall soon be seventy. I want to make a good deal of money out of this Lettuce, but I cannot get about as I used to.

Ques. Where did you get it from?

Ans. A French lady from the place where I came from, near Strassburg, brought me some seed. Strassburg is in Germany now; but I do not care. This is my country.

Ques. And you sowed the seed and found it good?

Ans. Yes.

Ques. Why is it so good?

Ans. Because it is.

Ques. I mean, why is it better than other Lettuce?

Ans. It is sweet and tender and always makes a head even on poor soil. But the richer the soil the better, and you do not sow it too thick and you should sow it early.

"Yes," said the daughter, "last year mother was cleaning the seed in the water and threw the chaff on the snow, and in the spring when the snow went off the Lettuce plants came up."

Ques. Cannot you tell me something more about it? Did the French lady tell you its name?

Ans. No. I have told you all there is to tell about it.

Ques. You have grown this same Lettuce ever since the French lady gave it you forty years ago. How did you manage to keep it?

Ans. (Smiling at my simplicity.) I raised seed myself. I left some of the very best heads every year for seed. And the people in Irondequoit wanted us to try some other kind. I saved the seed in another part of the garden. You know Lettuce will mix. I never found any other Lettuce as good as mine and I always grow the seed apart by itself.

Ques. How do you manage to grow the seed? I can't make it go to seed.

Ans. Some seasons you can't get any seed. But it will keep for many years and the old seed is just as good.

Ques. Do you do anything to make it go to seed?

Ans. Nothing except to select the best heads and then break off the lower leaves and open out the head.

I imagine that this last suggestion is valuable for general adoption.

1st.—It seems clear that this so-called "Deacon Lettuce" was a good variety to start with, or the French lady would not have thought it worth while to have brought it to this country.

2d.—That Mrs. Müller by keeping it firm and by continuing selecting the best heads has made it what it is.

3d.—It is not any better than it should be. It is good, or as "Elm" says, "the finest heading variety we have grown," because nearly all our Lettuces are so poor. I have often said that they are a disgrace to seed growers and seed sellers. And they will continue to be so till we adopt Mrs. Müller's method of selecting the best heads for seed.

JOSEPH HARRIS.

The Sweet Potato crop has suffered from drought in many localities, especially in the Southwestern and some Western States, while in parts of New Jersey it is reported as the best in ten years.

PRESERVING WATERMELONS AND SQUASHES.

It is not generally known that Watermelons may be kept in good condition until near Christmas; yet it can easily be done. I have often kept them until after Thanksgiving day, and had I started with a sufficient quantity, or had I been more frugal in their use, could, I am confident, have carried them up to Christmas. The trouble was, that they kept so well that we couldn't keep them long enough. It is as hard to keep Melons—from being eaten—as it is to keep a row of Peas for seed from the earliest ripened patch.

The method of preserving Melons is very simple indeed. A big box or bin in a cool corner of the woodshed, or in a tolerably dry cellar, is the first requirement; a plentiful supply of Oats, bran, sawdust or some such dry, light substance, the next; a layer of a few inches of this is put in the bottom of the box, and then as many Melons laid in as can be without bringing them any nearer together than three or four inches, keeping them away from the sides of the box about the same distance. The bran or other material used must then be sprinkled in among the Melons until all the spaces are filled, and another layer of three or four inches spread over the whole. This is continued until the box is filled.

The Melons should be picked for this purpose before they are fairly ripe. Late in the Melon season when frost threatens, the greener ones may be treated in this way, and thus saved from destruction and to serve as an unaccustomed luxury in wintry weather.

Squashes for late keeping must not be bruised in handling. Too often they are pitched into the wagon-box or rack at a good, long throw, so that every one of them is badly bruised. Wherever bruised they will rot, and that quickly. Freezing, however slight, is also fatal to them. Some growers leave their Squashes on the vines until frost cuts down the top leaves so that they can readily be seen and gathered, but such frost is pretty likely to touch the top sides of the Squashes also, and whenever so touched they will soon rot. They should be gathered as soon as the greater part of them are fairly ripe, and when growing near the cellar where they are to be stored, they may easily be hauled in on a stone-boat with side boards attached. The Squashes if picked and laid carefully on this conveyance will not be in danger of becoming bruised. Small loads must necessarily be taken in this manner, but the time thus consumed will be amply compensated for by the extra keeping quality of the Squashes.

Never should Squashes be piled up in huge heaps in the cellar as is often done, as it is sure to cause early and general decay of the whole mass. It is bad enough to store any vegetables in this way, but to the Squash it is certain destruction. It will require but little more space and a few feet of lumber to change the bin into a number of broad shelves where each Squash will have to bear only its own weight, and decay of one will not materially affect the others. Squashes are usually a salable market article in winter, and even if no better use could be made of them than to feed to stock, they are worth the little care necessary to preserve them.

W. D. Boynton.

GARDEN PEPPERS.

The Pepper is one of the most valuable of our garden plants. In our experience, it is seldom that we find fifty plants grown from the same sample of seed that are alike in their foliage and fruit. The flowers are very subject to cross-fertilization, and unless the different varieties are carefully separated, the seeds will not reproduce their kind. But all the variations that occur do not appear to be the result of cross-fertilization. For example, certain plants of a variety often bear their fruit upright, while all the others have pendant fruits, the plants showing no other differences.

During the past four years, several new names have been added to our list of Peppers, but most of these are new in nothing except their names. I will mention a few of these newer synonyms, and append a brief description of the varieties to which they belong, and of a few other sorts.

Monstrous, or Grossum. This does not appear to be an old variety, at least Mr. Burr, who wrote in 1865, does not mention it; yet if the seeds we have planted have been true to their names, we have grown this Pepper under the following appellations: "Monstrous or Grossum" (Thornburn & Co., 1882), "Spanish Mammoth," and "Monstrous" (Vilmorin, 1884), "Ruby King" (Benson Maule & Co., 1884), "Crimson Queen" (Tillinghast, 1885). The plant of this variety is one and a half to two feet high, leaves very large, the larger ones sometimes four inches long, and more than two inches wide. The borders of the leaves are a little undulate, and the edges are usually curved upward. Their surface is generally somewhat blistered. The stem is usually tinged purple at the nodes. The fruits are pendant, irregularly conical, generally a little curved, terminating in an obtuse point, about five inches long, and two inches in their largest diameter. The color when ripe is brilliant coral red. It is a sweet Pepper, and has very little of the true Pepper taste. In season it is rather late.

Sweet Spanish. This old variety was offered by Mr. Everitt last spring under the name "Red Prince." The plant resembles in general appearance that of the one just described. The fruit is shorter, and very blunt at the apex, where it usually ends with three or four rounded protuberances. Sometimes, however, it ends in a blunt point. It is considerably earlier than the Monstrous or Grossum, and is equal to it in sweetness.

Sweet Golden Dawn. This variety we believe was first offered by Messrs. Thornburn & Co. in 1883, and was last spring sold by Mr. Everitt as "Buttercup." As I find no record in the older books of a yellow Pepper answering to the description of this one, I conclude that it is truly a new variety, and it is perhaps the most valuable new Pepper that has been offered in many years. It has the remarkable quality of being so mild in taste, that it may be eaten like an Apple without the slightest inconvenience. Even the seeds are free from any pungent quality. The plant is 12 to 18 inches high, with foliage resembling that of the varieties named above. The stem is a little angular, of the same color as the foliage. The fruits somewhat resemble in form those of the Sweet Spanish, but they are usually rather more conical, and more ribbed.

Large Bell. This Pepper, which is known also as the Bull-Nose, Sweet Mountain and Mammoth, is one of the oldest and best known of the sweet Peppers. It is early and of excellent quality. I do not know that any of the more recently introduced red varieties are much superior to it. In some seasons I have thought that its fruits rotted worse than those of most of the other sweet Peppers, but this may have been accidental. The plant resembles that of the Monstrous or Grossum, while its fruit is very similar to that of the Sweet Golden Dawn, except in its color, which is glossy, coral red.

Chili Pepper. This variety is quite distinct from all that I have described above. The plant is low and spreading, the leaves are narrow, smooth and very numerous. The fruits, which on some plants are erect and on others pendant, are conical and but two or two and one-half inches long and about one-half an inch in diameter; it is red in color and extremely pungent in taste.

Cherry Pepper. The foliage of this variety is rather intermediate between that of the Chili Pepper and the sorts described above. The fruit is about the size of the largest Cherries, generally round though sometimes pointed and occasionally oblate. It is red and very pungent in taste.

Ox Heart: called also "New Ox Heart." This variety resembles the Cherry Pepper in foliage and fruits except that the latter are about twice as large.

Cranberry Pepper. In habit and foliage this variety resembles the Chili Pepper, but is more dwarf. The fruit, which is round and extremely pungent, is scarcely larger than the common Cranberry.

Cayenne Pepper. I am somewhat perplexed in regard to this variety. Both Vilmorin and Burr expressly state that the Cayenne Pepper of commerce is the product of a plant belonging to a distinct species from that of our garden Pepper, and which will not endure our climate. Yet nearly all our catalogues mention this sort, and often the word "true" is appended to the name. I have grown three different Peppers under the name Cayenne, but surely none of these was sufficiently distinct from our other garden Peppers to belong to a different species.

"Elm."

FRESH SPROUTS.

Sowing Onions in autumn is gaining in favor with gardeners. To meet with success in this way the soil must be dry, and in the very best condition possible, and the bed should receive a light covering during winter.

Celery is becoming one of the leading crops of Michigan. Last season $165,000 were realized by the growers near Kalamazoo alone, while at Jackson and other localities the area of Celery growing is rapidly increasing.

Parsley is a very convenient thing to have in the house during winter. It makes a pretty garnishing and adds a brisk flavor to many dishes. By planting a few roots in flower pots or boxes, and keeping them in a sunny window, "greens" may be picked from them all winter.

Flowers.

THE FLOWER GARDEN IN NOVEMBER.

WINTER PROTECTION.

Again the leaves begin to fade, foretelling the approach of winter. What a grand protective carpet these leaves make for the comfort of our beautiful native flowers during the severe cold. Many herbaceous plants would succumb to the severity of our winters were it not for the covering of leaves they get in the fall. The herbaceous plants under cultivation in our flower-beds and borders are also much benefited with a similar covering; even the hardiest of them flower better the following season by being so protected. If leaves cannot be had conveniently, use coarse litter instead, and do not put it on until the ground is beginning to harden with frost, which is generally after the middle of the month.

TIDYING.

Remove the dead stems from the herbaceous plants, pull out Geraniums and other tender plants which have been killed by frost, rake up fallen leaves, gather all and place in a heap to decay; when thoroughly decomposed they make an excellent compost for manuring flower-beds, and for topdressing the lawn.

IMPROVING THE SOIL.

Digging up and manuring flower-beds and borders in late autumn, brings them in better condition for the growth of plants the following season, facilitates spring work and makes the surroundings more neat and attractive during winter.

Beds of a stiff and clayey nature are often much benefited by an application of good, sharp sand well mixed with the soil. Sand renders the soil easier to work, makes the plants start into growth quicker and to produce a greater abundance of flowers.

It is not advisable to make flower-beds too rich, as this is apt to encourage a too succulent growth at the expense of flowers. Leaf mould makes the best material for fertilizing flower-beds; when this cannot be had, use thoroughly decayed barnyard manure instead.

PROTECTING ROSES.

All Roses should be protected during winter by giving them as soon as the ground is frozen a good mulching of leaves or any other suitable material. The more tender of the hardy sorts should be wrapped with straw, or sheltered with evergreen boughs. If none of these materials are handy, bend the plants down and cover with two or three inches of soil.

ARRANGEMENT OF ROSES.

Nothing looks more attractive on the lawn than a bed of different kinds of hardy Roses, harmoniously arranged, allowed to make a good start, and then pegged down to the surface of the ground. Under this mode of treatment a more abundant supply of flowers is obtained, the flowers appear to better advantage, and the plants look much better during the winter season. A light covering of leaves, straw or evergreen boughs may easily be placed over them, and in the spring they will start evenly and vigorously.

PREPARING A ROSE BED.

North of New York it is not advisable to plant out a Rose bed in the fall, but fall is the best time to make the bed ready for spring planting. See that the ground is either naturally or artificially drained, dig it two spadings deep, and to this depth thoroughly incorporate with the soil well-rotted cow manure and a good sprinkling of ground bone. After the bed is finished, cover with about six inches of manure which is to remain until spring.

Planted in spring, a fine display of blossoms may be obtained the first year, if good, strong one or two-year-old plants can be obtained. Some of our choicest kinds are so weak growers that it is necessary to work them on strong stock in order to induce a vigorous growth, but inexperienced growers should plant only Roses that are on their own roots; from them there is no danger of suckers coming up and taking all the strength from the flowering shoots.

COLD FRAMES.

Frames containing Pansies, Daisies, Forget-me-nots, *Phlox Drummondi*, etc., should be banked up and placed in a condition so that in case of a sudden cold snap, the sashes can be put on, and the plants protected against a severe freeze, which often happens this month. If mild weather follows a cold snap, always give all the ventilation possible, as upon this depends to a great extent the safe wintering of such plants.

THE SOUTHERN RED LILY.

Lilium Catesbæi.

"Americans pass over with neglect what Europeans seek after eagerly, and pay high prices for," I noticed recently in some journal. This is no doubt true with many of our beautiful native plants, and especially so with our lovely Southern Lily, which until quite lately was not to be found in any of our collections, while in England it is highly prized, and classed with the most expensive kinds, and considered worthy of a prominent place in the choicest collections.

Seeing an illustration of this Lily, and being desirous of obtaining a bulb, I wrote to every name and address I could secure in localities where it was likely to grow. I succeeded beyond my wildest hopes, securing not only many bulbs of it, but hundreds of others, from Maine to California; but my patriotism makes me prouder of this wildling of my fair South-land than all the rest.

Catesby's Lily has deep scarlet open-bell-shaped flowers, borne solitary on upright stems 18 to 20 inches high. The long-clawed sepals are wavy on the margin, recurved on the summit, and spotted with dark purple and yellow inside; leaves linear-lanceolate, scattered, the lower ones clustered close to the ground. The bulbs are small but exceedingly floriferous.

The whole appearance of the plant is delicate and pleasing, and although growing wild in the pine-barrens of the South it is highly amenable to cultivation, and will surely please anyone who will give it a place in his collection of Lilies.

MRS. J. S. R. THOMSON.

South Carolina.

A dry, frost-proof cellar is an excellent place for wintering many large, hard-wooded plants, also Cactuses, Yuccas, Century plants, and nearly all kinds of summer-flowering bulbs.

NEW ROSES.

The vicinity of the city of Lyons in France enjoys one of the most favorable climates for the cultivation of Roses in the world. The seeds ripen completely in the open ground, and furnish therefore the best conditions for the raising of new varieties, for which this locality has long been considered headquarters. Still some excellent varieties have been produced by Lévêque & Margottin near Paris, by George Paul and Wm. Paul near London, and especially by Henry Bennett, the originator of the celebrated Bennett Rose.

After new varieties have been sufficiently tested, and are found worthy of dissemination, they are propagated by budding of dormant buds on the collar of one-year-old seedling briars. They are then cultivated one year in the open ground so as to form strong, healthy plants which will stand transportation well and are suitable for immediate planting out or forcing. The following are the best new Roses raised in Lyons to be sent out 1st November, 1885.

TEAS.

Marquise de Vivens (Dubreuil).—Beautifully shaped large buds, very bright, dark Rose, edged yellowish white; outside of the petals white, slightly yellowish; semi-double; only very fine in buds before expanding.

Comtesse de Frigneuse (Guillot).—Very fine shape, medium size, nearly full, free bloomer; very bright, pure yellow.

Souvenir de Helene Lambert (Gonod).—Yellowish pink, center darker, medium size, full.

Souvenir de l'Admiral Courbet (Peponet).—Medium size, nearly full, dark Rose, not very vigorous.

Madame David (Pernet).—Flowers large, nearly full, delicate Rose, sometimes shaded light salmon, edged white; vigorous.

Edward de Biauzat (Levet).—Flowers large, full, fine globular shape, light, vivid pink.

Claudius Levet (Levet).—Flowers large, carmine rose, edged darker, center slightly yellowish; vigorous.

Marguerite Ramet (Levet).—Flowers large, full, fine shade; very fine, vivid rose, center lighter, slightly shaded, light carmine; vigorous, free bloomer.

HYBRID PERPETUALS.

Rosieriste Chauvry (Gonod).—Flowers large, full, fine globular shape, light, bright crimson.

Souvenir de Victor Hugo (Pernet).—Flowers large, nearly full, globular, brilliant light rose; vigorous; free bloomer.

Clara Cochet (Lacharme).—Flowers extra large, fine, globular shape, full; very brilliant, light rose; center darker.

PERPETUAL POLYANTHA.

Floribunda (Dubreuil).—Dwarf; flower size of those of Anne Marie de Montravel, delicate rose, shaded white; very full, large trusses, abundant bloomer, very hardy.

Max. Singer (Lacharme).—Very vigorous; sarmentose like the type; flowers large for the species; size of those of Ile Bourbon Hermosa; bright, dark, cherry red or bright, light crimson; very free bloomer.

JEAN SISLEY.

Montplaisir, Lyons, France.

Soil for hot-beds to be made early in spring should be thrown in heaps and covered with old boards before the ground freezes too deep. Or if a sufficient quantity can be brought under a shed, this answers the purpose still better.

According to the computation of the botanist of the Ohio Agricultural Experiment Station a "Pusley" plant matures about 400,000 seeds. Moral: Don't let Pusley go to seed. It is quickly killed by piling in heaps.

THE CHRYSANTHEMUM.

Chrysanthemum Sinense.

In the "long ago," when I was a boy, there was a popular plant, grown in almost every garden, and known by the name of the Artemisia, and it is still known only by that name by a good many people. I allude to the *Chrysanthemum Sinense* and its many varieties. A good many of our country cousins would not even to-day know what you meant if you should talk to them about Chrysanthemums; and I am very sure, on the other hand, that many of our younger flower lovers would understand just as little what you meant if you should talk to them about the old garden Artemisias. It is well to know, therefore, that the Chrysanthemum and the old garden Artemisia are one and the same plant. Taking all things into consideration, I doubt very much whether the Chrysanthemum is to-day more popular than the garden Artemisia was forty years ago.

Some marked improvements, however, have been made in the Chrysanthemum in a certain direction, and the varieties have been wonderfully increased. Some of the old kinds are still held by connoisseurs to be among the best in their classes, and it would be difficult to find a prize stand at English shows that did not contain such charming old varieties as Cedo Nulli, Bob, and others I might name. The old kinds are, on the whole, a hardier race than the new generation; a good deal of hardiness having been sacrificed to variety.

The Chrysanthemum is now divided primarily into two classes, the Chinese and the Japanese. The Chinese are divided, again, into sub-classes, such as large-flowered, pompone, (small-flowered.) incurved, anemone-flowered, and so on: and recently the Chinese and the Japanese classes have been crossed, and the result is a "mixture" that sets all laws of classification at defiance.

The typical Japanese varieties are singularly grotesque and unique, yet very beautiful, with long, narrow petals and bright colors, the most characteristic form having been well likened to a pin-wheel in motion. While the Chinese forms are symmetrical, the Japanese make fancy work of symmetry. The accompanying illustrations give a good portrait of each form.

The length allotted to this article will not permit of the details of culture as the Chrysanthemum is now grown. To do this in a satisfactory manner would require at least a page. I will therefore give a list of some choice kinds, supplemented with a few hints on treatment. Some of the kinds will be selected with some reference to their hardiness.

The following are larger-flowered Chinese varieties: Empress of India, pure white; Gloria Mundi, bright yellow; Madame Roux, very large peony-formed flowers, amaranth red, reverse of petals pale violet; Temple of Solomon, deep, golden yellow; Dr. Sharp, fine crimson; Rifleman, ruby red, incurved; Lady Hardinge, pale rose; Golden Empress of India, bright yellow; Venus, pink; Faust, crimson purple; Countess of Dudley, deep lilac, incurved; Emily Dale, primrose.

Pompone or small-flowered: Bob, deep crimson; Gen. Canrobert, deep yellow; Cedo Nulli, white; Sanguineum, dark crimson; Model of Perfection, lilac, edged white; Fanny, rosy crimson; Princess Meletia, white, fringed; Drin Drin, yellow; Cendrillon, rosy lilac; Brilliant, orange red; Jason, amaranth; Madame Domage, golden yellow.

CURLED JAPANESE CHRYSANTHEMUM.

INCURVED CHINESE CHRYSANTHEMUM.

Japanese: Elaine, pure white, and very beautiful; Golden Dragon, yellow; Juvenn, white; Fimbriatum, delicate pink, fringed; Red Dragon, red; Ereeta superba, bright rose; Lady Selbourne, pure white; Abd-el-Kader, crimson maroon; Parasol, buff shaded with salmon; Gold Thread, gold and bronze; Père Delaux, reddish brown. The list could be greatly extended; but the kinds named are all good and can be easily obtained, with the exception of a few, such as Bob and Cedo Nulli, which are not easy to get true to name.

The Chrysanthemum is now largely grown as a pot plant for winter decoration; but under glass it is only seen at its best in a low temperature, and chiefly in glass houses built for the purpose, where they bloom freely till the holidays are past. They may, in fact, be had in bloom all winter, if not all summer. The plants, however, are grown in the open air till frost appears, when they are removed to the house. They are grown as bushes and as standards, and need a good deal of attention to fit them for exhibition purposes. How this is done I may tell at some other time. The plants are also frequently grown in the ground during summer, lifted and potted on the approach of cold weather, and taken into the house to bloom.

In a sitting-room or warm greenhouse the plants soon become covered with the black aphis, which renders the plants unsightly and destroys the bloom. The aphis may be killed with Buhach powder or by syringing with a solution of carbolic soap, the latter, however, being apt to disfigure the flowers.

The Chrysanthemum is propagated by cuttings and by division of the roots, which is done in the spring. If large plants are wanted, the soil should be rich. Plants bloomed under glass should be removed to a cold-frame or a cool cellar as soon as they have done flowering. P. B. MEAD.

CANNA EHEMANNI.

This new or re-introduced Canna is one of the best plants we have for the decoration of the lawn. It is truly a noble variety of this favorite class. A correspondent from Wisconsin writes: I dug a hole as large as a bushel basket, and filled it with the richest compost I could find. In this I planted the tubers. As soon as they began to grow, I gave them a great deal of water. The result is, plants six feet high, with enormous leaves of a rich, shining green. A group of them produces a grand, tropical effect.

OUR FLOWER BASKET.

Light frost does not hurt Canna roots, but hard freezing injures their keeping quality seriously. Keep in a dry, moderately warm place.

Petunias, Mignonette, Pansies, and many other self-sown young plants may still be taken up and potted, and will make charming window plants.

Asclepias tuberosa, our wild Butterfly Weed, is one of the most showy perennial plants cultivated in European gardens, and justly deserves a place in our own.

The Window Garden AND GREENHOUSE.

SPECIMEN PLANTS.

In growing plants for exhibition, or for the decoration of our rooms and halls, it is of first importance to select such kinds and varieties as are best suited for the purpose. The process of producing symmetrical, well-developed specimens is simple enough, if a little care and attention is given.

There is a good deal of misconception about the necessity of special soils for each class of plants. Good, rather sandy soil taken from the roadside or a pasture, and well mixed with one-fourth of decomposed manure is suitable for nearly all cultivated plants. Whether grown in the window, sitting-room or greenhouse, specimen plants should be turned every few days, that every part of them may be equally exposed to light. Stakes should be given when necessary, and strong shoots pinched back so as to maintain a pleasing and symmetrical shape. The one great rule for watering is, never to give water to a plant until it shows signs of being dry, and then to water freely so that the water may reach the soil in the very bottom of the pot.

COLEUS.

Some of the new kinds of fancy Coleus, though worthless when grown in the open air exposed to the full blaze of the sun and drying winds, are perfectly gorgeous in coloring when grown as window plants where sufficient light can be had to develop the coloring of their leaves. Among the most marked and finest new varieties are: Mary Kennersly, carmine and crimson; Magpie, white and green; Golden Dawn, rich canary yellow; Crimson Bedder, vermillion blended with maroon; Paroquette, vermillion, crimson and gold; Aline, rosy scarlet ground, maroon edge; Corsair, scarlet, black and vermillion; Rosser, crimson, green, yellow and maroon; Splendour, carmine ground, fringed gold; Black Butterfly, dark crimson tinted light scarlet; Chameleon, rose, green, yellow and purple; and finally we have the Unequalled, which is rosy scarlet, fringed with yellow.

GERANIUMS.

Another easily managed class of plants is the double and single varieties of Zonal Geraniums. Six of the finest single and double are embraced in those below named.

Single: King Olga, large rose, white center; Snowflake, pure white; Blaziana, dark crimson; Gurnea, orange scarlet; Hebe, deep pink; Mons. Bellot, dazzling scarlet.

Double: Double Gen. Grant, large scarlet; Alba plena, pure white; Jennie Dolphus, violet; Annie Monde, light rose; Grand Chancellor, dark crimson; and the J. C. Rowland, salmon.

Many of the new double sorts of Ivy or climbing Geraniums introduced within the last two or three years are quite equal in size of truss, fullness of flower and brightness of coloring to the best of the zonal class. No plant is better fitted for room decoration. It can easily be trained on a trellis to the height of six to eight feet in breadth and height, and may be grown in any ordinary light sitting-room nearly as well as in the greenhouse.

The best double Ivy-leaved Geraniums are: Comtess D. Chorsel, salmon rose; Madam Thebaut, deep rosy carmine; Elfreda, lilac; Madame Chervil, rosy scarlet; Emily Lemoine, light scarlet; and the Eva, which is pure white.

CALADIUMS.

Fancy Caladiums are comparatively little known among amateurs, yet for decorative "foliage" plants they stand almost unrivalled, assuming every style of marking, so strange and varied is the splashing and spotting and marbling on the green leaves, that when first seen it seems more like the work of man than of nature. The leaves are mostly heart or arrow-shaped, of varying shades of green, and in some kinds the markings look as if sprinkled with white, scarlet, crimson or pink paint drops; others again are marbled and shaded in every conceivable way.

CROTON AUREUM MACULATUM.

Perhaps the most distinct six kinds are: Refulgens, Edward Moreau, Borral, Keteleri, Bicolor, and Dr. Lindley.

BEGONIAS.

The "Rex" or fancy-leaved Begonias are another class of tropical plants of exceeding beauty, when well grown. The leaves are mostly heart-shaped, eight to ten inches in length and width, curiously marked in different shades of green, black, rose and violet. The surface of the leaves of most of them has a rich, metallic luster, looking in some varieties like beautiful frosted silver. As all these plants are natives of the tropics they can be grown successfully only during the summer months. Specimen plants of Coleus, Caladiums and Begonias should not be started before the middle of May. When started at that time, and afterwards shifted into larger pots, whenever the pots they are growing in become filled with roots, by the middle of September, Coleus will have reached a height and width of from three to four feet, Caladiums of from two to three feet, and Rex Begonias of from one to two feet, if in the meantime ordinary care has been taken for them. PETER HENDERSON.

WINDOW FOLIAGE PLANTS.

BY JOHN THORPE.

In rooms in which the temperature does not fall below 65°, many of the most beautiful foliage plants may be grown successfully; and when it is considered that the plants require not nearly as much care and attention as the more delicate flowering plants, it is surprising that amateurs do not give more attention to their culture in the house.

CALADIUMS.

The species with many-colored, spotted, striped, and mottled leaves, are very handsome plants for summer, and can be started in small pots in March in the warmest corner, repotted as they grow into pots of four or five inches diameter, and by the time other plants have to be removed out of doors these will be fine objects all through the summer months.

COLEUS AND ACHYRANTHES.

These are splendid plants for very warm rooms. Strong tops can be easily rooted from plants growing outside, by the middle of August, taken inside before any chilly nights come, repotted into necessary-sized pots, and kept well supplied with water. They are among the best plants for winter cultivation indoors, and are not at all costly.

CROTONS.

Although Crotons have not as yet been employed for window plants to the extent they deserve, their richly-marked leaves, elegant forms, and variable shapes are always attractive. They delight in rich soil, a high temperature, and moderate light; should be frequently cleansed, either by sprinkling, bathing, or sponging; they may either be kept inside all summer, or after the 1st of June they may be plunged in some shady, warm corner outside, until September. Any straggling shoots should be pinched or cut off from time to time, thus producing a bushy growth. These are among the most showy ornamental leaved plants that can be grown indoors.

DRACAENAS.

These well-known elegant plants are easily managed. *D. terminalis*, *Guilfoylei*, *Cooperi*, and *amabilis* are grown in great numbers for window plants, and if they are treated as advised for Crotons will give the same satisfactory results.

FERNS.

Numerous species succeed in the shadiest windows, requiring but little attention, and are always graceful and cheering. They must be kept well supplied with water, occa-

sionally bathed or syringed; in the summer time plunged out of doors in some shady, damp spot, and in September, before bringing in again, should be repotted. This is about all the cultivation required. A few beautiful kinds are *Adiantum cuneatum*, *Farleyense*, *gracillimum* and *trapeziforme*, *Davallia tenuifolia*, *Lomaria gibba*, *Microlepia hirta cristata*, *Nephrolepis davallioides furcans* and *Pteris Cretica albo lineata*, not forgetting a few varieties of Selaginellas or Lycopodiums.

THE INDIA-RUBBER TREE.

The *Ficus elastica* or India-rubber tree is well known, and might almost be called the indestructible plant. With its bold and leathery leaves and free and noble carriage it bids defiance to dust and smoke alike, providing always it has plenty to drink, with occasionally stimulants added to the soil in the pot.

PALMS.

Palms are the aristocracy among foliage plants, mostly very easy to manage, requiring a good deal of water and not necessarily very large pots; thriving well in a partially shaded window, to be frequently washed overhead, and can always be placed outside under partial shade in summer time. A few fine kinds are *Areca lutescens*, *Caryota urens*, *Cocos Weddelliana*, *Latania borbonica* and *Oreodoxa regia*. They may be used for various purposes of table decoration, and need not necessarily be taken out of doors if desirable for windows in the summer.—*From an address before the N. Y. Hort. Soc.*

CROTONS.

In the beautiful colors and varied markings of their leaves, as well as in the number of different shapes found in their numerous varieties, the Crotons are not excelled by any other class of plants. Most species are natives of the East Indies and South Sea Islands, therefore requiring for their perfect development a high, moist temperature, but if too succulent a growth has not been made, they make beautiful lawn objects during the hot summer months. I have also seen them planted out in connection with fancy-leaved Caladiums, forming attractive beds.

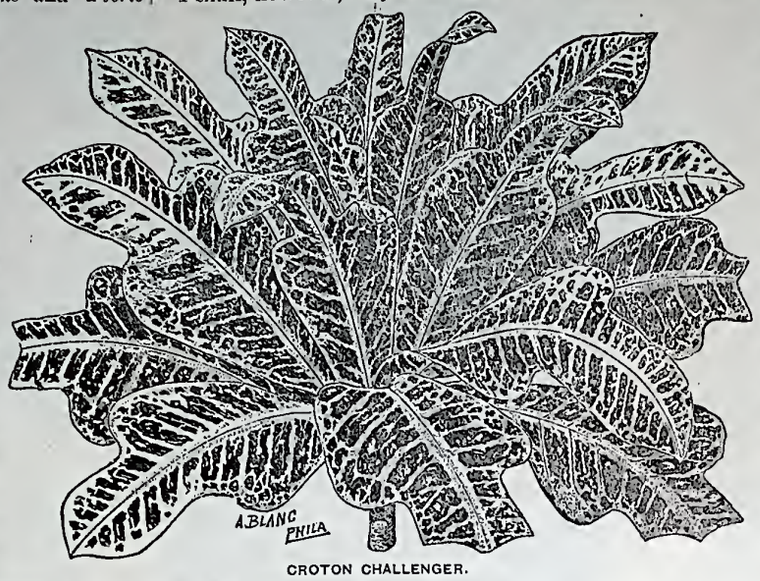
For exhibition plants, the adornment of the conservatory, and general decorative purposes, Crotons are best adapted and most suited. No collection of ornamental plants can be considered complete without a few specimens, especially of the more easily grown and hardy kinds.

The soil most suitable for Crotons is a compost of equal parts of fibrous loam and peat, with a good addition of sharp sand. Plenty of drainage must be given, as they require when growing an abundance of water at the roots.

When making their growth they require a strong, moist heat, and, in order to get well-colored leaves, they should be kept close to the glass where they can get plenty of light. These conditions complied with they are easily grown, their beautiful leaves brightening up the appearance of any collection of plants.

Every year we have introduced by European florists new varieties exhibiting all shades of color and all shapes of leaves, some of which are more peculiar than pretty.

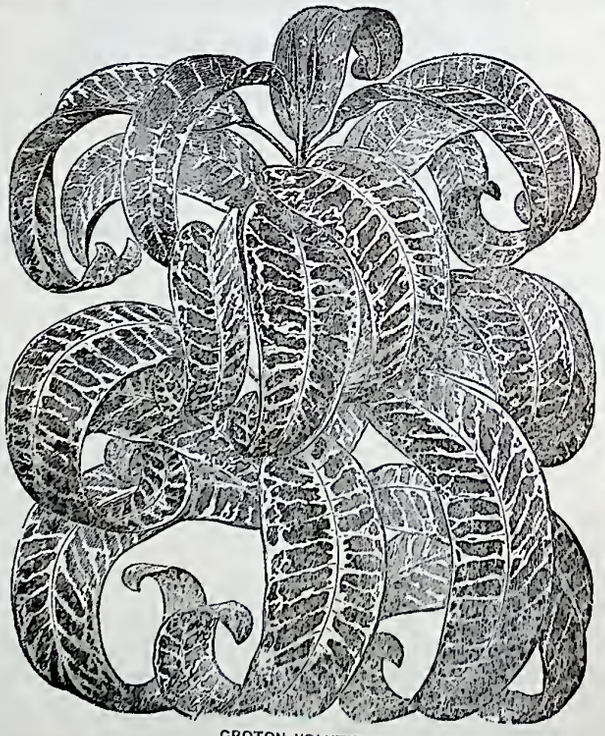
I shall, however, only mention such kinds as have been tried and are distinct in color and character and well worth growing.



CROTON CHALLENGER.

C. variegatum, one of the oldest but one of the best kinds grown, ground color of the leaves, green, broadly margined and striped with rich golden yellow, fine but compact grower and one of the hardiest.

C. pictum, another old variety, the ground color of the leaf of which is a fine crimson, spotted with yellow and green.


CROTON VOLUTUM.

C. aureum maculatum is one of the most distinct of the *pictum* type; its leaves are bright green, spotted with golden yellow.

C. spirale. As the name indicates the leaves are spiral in form, much resembling a corkscrew. The ground color is green, spotted and marked with bright yellow.

C. Challenger. The leaves of this plant are large, broad, and beautifully striped and spotted with bright, golden yellow. A fine variety.

C. interruptum makes one of the handsomest of plants, grows naturally pyramidal, the leaves long and narrow, some of them twisted, others narrow in one place, wide in another. The under side of the leaf is a dark red, the upper surface reddish green tinged with yellow. Makes a large specimen in a short time.

C. maximum. A large, broad-leaved kind, color bright golden yellow, on an olive green ground.

C. undulatum. The first specimen I saw of this variety impressed me as being the most beautiful plant I had ever seen. The leaves are undulated at the edges, the ground color is a deep green blotched with yellow and crimson, habit good, and an excellent show plant.

C. Veitchii. Another of the large-leaved sorts, the ground color of which is a rich green, having a broad band of yellow and red running through the center of the leaf.

C. angustissimum has long, narrow, pendulous leaves which are often twisted in form; the color is a bright, golden yellow, giving it a most handsome appearance.

C. volutum is very distinct; its leaves are curled, and elegantly mottled with yellow on green ground. M. MILTON.

RED SPIDER.

(*Acarus telarius.*)

I have repeatedly called attention in THE AMERICAN GARDEN to this persistent foe to window plants, and urged your readers to deny the pest a footing, writes Wm. Falconer. In your report of the meeting of The American Florists at Cincinnati, page 218, Mr. C. L. Allen says that the red spider "never ate a plant in its life. Microscopic insects come to live upon the plants and the red spider to live upon them. It is a friend, not a foe." Now friend Allen will have his little joke, but whether this was a joke or no I cannot say. But I do know and will assert that the red spider (*Acarus telarius*) lives upon the juices of plants, and is one of the worst, if not the most terrible insect enemy greenhouse gardeners have to contend with. Look for yourselves.

OUR WINDOW BOX.

Ferns should never be allowed to become dry; they do better in partially shaded than in full sunny windows.

Rarely has there been a summer when so many flowers have been sold in the Metropolis; retail dealers have not been idle, which is generally the rule at this season; and wholesale florists have been kept fairly busy supplying the watering-places. The late summer has made flowers unusually fine.

Forestry.

TREES OF THE UNITED STATES.

There has recently been placed on exhibition, at the New York Museum of Natural History, an almost complete representation of the trees of the United States, between 400 and 500 trunk sections of the different species. These specimens are about five feet eight inches long each, cut in such a manner as to display their bark and the transverse and longitudinal sections of the wood. This is done by cutting away one side of each specimen at the top to the depth of one-half the diameter of the trunk and for one-third of its length. One-half of each exposed portion is polished to illustrate the effect of this treatment of the wood, the remainder being left in the natural condition, with the top of the upper divided part finished by beveling. In the case of trees of commercial importance this form of representation is supplemented by carefully selected planks, or by burls, showing better than the logs the true industrial value of the wood. Among specimens of this kind is a plank of Redwood, *Sequoia sempervirens*, measuring eight-and-a-half feet in width. A species remarkable for slow growth, and which is only 24 inches in diameter, shows an age of 410 years, being the oldest tree in the collection. This is the *Picea Engelmanni*, named for its discoverer, Dr. Engelmann, and known also as Engelmann's Spruce. Another example of slow growth is seen in the *Pinus edulis*, or Edible Pine, from Arizona, called also Nut Pine. The seed of this Pine, which resembles a good-sized Bean, is used by the Indians for food. A tree of this species which is 369 years old, measures only 15 inches in diameter. Another specimen, which is 341 years old, shows a diameter of 37 inches. It is the Western Shell Bark Hickory, *Carya sulcata*, from Allentown, Mo. The same locality is represented by a specimen of the *Tilia Americana*, or Basswood, which is 40 inches in diameter, and 150 years old.

This valuable collection, numerically exceeding that made in connection with the census reports, includes examples of many curious and interesting species, of which probably the complete natural series could never have been viewed in their native soil by any single traveler, however diligent. Among specimens of such interest is that of the *Gleditschia triacanthus*, or Honey Locust from Missouri. This is a tree of singular appearance. Its trunk is covered with thorn clusters, the spikes shooting ray-like in all directions from their growth centers. These thorn formations have their basis in the bark alone, without any source whatever in the wood itself, not even reaching it, and are easily detached. It was, therefore, necessary to suspend the tree from the ceiling of the ear in its journey from the West.

Another extraordinary tree is a representative of Texas. This is the *Cereus giganteus*, a Cactus which resembles a fluted column. It is a tree which can be readily taken all to pieces. Its component parts are in the form of vertical sections of twisting curvatures in the line of their circumference, whereby one portion is fitted exactly to another. They can be separated without the slightest difficulty, in the absence of any heart at the center for their attachment. The Washington Palm from Southern California is also curious. The specimen includes the top of the tree, which is severed from the body, and bears its dried and yellow widely-spreading leaves. Its peculiarity is in the ring formations of the trunk, which are almost wholly detached from each other, standing one within another like a succession of forms of bark, which are easily separated.

The Cocoanut tree from Key West and the finely odorous Nutmeg tree from California are among other specimens of importance. The Catalpa is represented as a species most remarkable for its durability. Some of this wood known to have been buried in the earth for seventy-five years has been brought out in perfectly sound condition. Specimens of beautiful woods are seen in the Holapesis, the Arbutus, Sweet Bay, *Persea carolinensis*, Alaska Cedar, *Chamæcyparis nutkansas*, and the beautifully figured Maple Burl from Missouri.

With only seven unimportant exceptions, the specific gravity, ash, and fuel value of the wood of every indigenous arborescent species of the United States have been scientifically determined. The specific gravity is obtained by weighing carefully measured specimens 100 millimeters long and about 35 millimeters square, previously subjected to a temperature of 100° until their weight became constant. The ash is given in percentages of dry wood, which are determined by burning small blocks of the wood in a muffle furnace at a low temperature. The relative approximate full value of any wood is obtained by deducting its percentage of ash from its specific gravity. The correctness of the result thus found is based upon the hypothesis, first proposed by Count Rumford, that the value of equal weights of all wood for fuel is the same, which is considered to be approximately true.—*Scientific American.*

Sewage.

HOW THE SEWAGE OF PARIS IS DISPOSED OF.

When the publisher of the GARDEN was travelling in Europe, a few years ago, studying various phases of agriculture, none was more interesting than the utilization of the sewage. In France the idea has its greatest development. *La Semaine des Constructeurs* quotes from a pamphlet just published by M. Durand-Claye some definite statistics in regard to the Gennevilliers irrigation and the sewerage of Paris, which are well worth remembering. For some reason, the results of the Gennevilliers experiments have been for a long time obscured by a curious indefiniteness, not to say wildness, of statement on the part of those who had pretended to have examined them, which no impartial person seemed to think it his business to correct; but the city of Paris has now definitely committed itself to irrigation as a mode of sewage disposal, and it has become necessary to obtain exact statistics of what has been accomplished, for the benefit of the city engineers, and incidentally for that of the rest of the world.

To begin at the beginning, the entire efflux through the sewers of Paris is ascertained to amount, on an average, to 362,000 cubic meters a day, or about 96,000,000 gallons. This is almost exactly three-quarters of the total amount of water furnished by the aqueducts and the rainfall, the other quarter being carried off by evaporation, absorption into the soil, or by flow over the surface directly into the Seine. All the drainage flow, before leaving the city, is collected into three great intercepting sewers, two of which, conveying 318,000 cubic meters a day, join into one at Clichy, just above a pumping station, where engines of 1,100 horse power lift a part of the liquid into the pipes, which convey it to Gennevilliers, while the surplus is allowed to flow into the Seine. The remaining intercepting sewer carries 44,000 meters a day by gravitation to the Seine at Saint Denis, but a branch is taken from this early in its course which conducts a portion of its flow to Gennevilliers, to supplement the main system.

The main irrigation conduit, which leaves the great double intercepting sewer at Clichy, is of rubble and Portland cement, 49 inches in diameter. After reaching the irrigated field, it gradually diminishes in size, throwing off branches, formed of concrete, and varying from 14 to 40 inches in diameter, which serves as an overflow, to carry the surplus liquid of storms into the river. The supplementary irrigation main branches in the same manner over a different portion of the territory, and the filtered effluent is conducted to the Seine by collecting drains. The present area of irrigated land in the Gennevilliers peninsula is 1,430 acres, and the system is continually being extended to new land at the request of the owners. The whole amount of sewage brought to the peninsula by the drains is 18,000,000 of cubic meters a year, or about 12,000 meters annually to the acre—not far from 3,000,000 of gallons per acre—an amount sufficient, if delivered at once, to cover it all about nine feet deep.

Experiments have been made to determine whether a larger flow could be advantageously used, and for growing Beets it seems likely that much more could be absorbed; but for general purposes the present flow is well proportioned to the needs of the ground, and the annual return from the crops is from $250 to $800 per acre, and even more where a cultivator has made a fortunate choice of a special product. The rent paid for the land has tripled within a few years, and averages now $38 an acre; while the population of the place increases constantly by the arrival of farmers anxious to share in the profits of sewage cultivation.

Judging from the results obtained here, the engineers of the city have decided that 10,000 acres of ground will satisfactorily and profitably purify the whole of the sewage of Paris, and have set about inquiring for suitable territory to that amount. The districts of Acheres and Saint Germain, which have already been condemned and taken for the purpose, will furnish only 3,000 acres, in addition to the 2,000 contained in the Gennevilliers, so that 5,000 more must, sooner or later, be found somewhere; but there can be no doubt that, with anything like the high rents paid at Gennevilliers, the returns from the land taken for irrigation would make the expense of taking it a safe and profitable investment for the Parisians.

Lawn and Landscape.

TRUE LANDSCAPE ART.

Donald G. Mitchell, in his work entitled "Out of Town Places," says the true art of landscape gardening lies in such disposition of roadways, plantations, walks and buildings as shall most effectively develop all the natural beauties of the land under treatment, without conflicting with the uses to which such lands may be devoted.

It comes also within the domain of the landscape art to secure an agreeable lookout from the cherished windows of the country homestead, whatever may be its situation. Accident or choice of site may indeed secure this beyond question, but site being established where views are limited or obnoxious objects fret the eye, it is surprising what may be done by judicious planting.

THE YEW AS A LAWN TREE.

A group of Yews, says Josiah Hoopes in the N. Y. Tribune, constitutes one of the prettiest features on a lawn, and though there is an impression that they are not hardy, the contrary will prove the rule, in all sheltered locations in the Middle States. During exceptionally severe winters the young shoots are liable to injury, but although this may disfigure the plant for a time, it will eventually cause a denser growth and more desirable form. An annual pruning is requisite with the entire family, yet merely the tips should be cut, as the growth is slow.

An enumeration of the various kinds is unnecessary here, as our leading nurserymen mostly keep a good assortment in stock, but the following should be included: *Taxus cuspidata*, a very hardy species from Japan. *T. aurea*, the bright Golden Yew so popular in England, and succeeding here in sunny exposures. Our native species, *T. Canadensis*, trailing in a wild state, but forming an erect, bushy plant when pruned regularly. *T. Canadensis variegata*, or *T. Washingtoniana*, a pretty, variegated form of our native plant. There are numerous others, valued mostly on account of difference in outline, growth or color, which show to decided advantage when contrasted in a group.

PRAISE OF SHRUBS.

Ornamental shrubs, judiciously planted and grouped on a lawn or about the dwelling, impart a grace and beauty that nothing else can furnish. Shrubs, said W. C. Strong before the Massachusetts Horticultural Society, are peculiarly adapted to give the best effects at the least cost and with permanent results. There is no danger that they will grow up to shut out the sunlight and views from our dwellings. Many of the coarse-growing kinds are not in keeping with highly cultivated estates, but may be used in less conspicuous positions and for wind-breakers. But there is left a long list of kinds suited to the most cultivated positions; the difficulty will be in making judicious selections.

However much we may prize the flowering quality of shrubs, we must remember that this is shown in most cases for only a week or ten days in the year, and we desire something more than this brief enjoyment. It is true we have some shrubs which flower at periods of scarcity, like the Clethra and Hydrangeas in August, and the Althæas in September, and which would therefore be indispensable for that quality alone. The Rose also is an example of such superlative beauty in bloom that it can well afford to stake its reputation upon this one point. Still, it remains true, as a rule, that we must seek for effect in form, and for grace and luxuriance in foliage, as giving more enjoyment in the aggregate than flowers in their brief period. We must study to harmonize and heighten the effect of color, form and size in our lawn planting.

We have a greatly increased range of color, from the white of the Cornus and Althæas, the golden of the Elder and Spiræa, and of evergreens the Retinispora, Arbor Vitæ and Yew, the vivid green of the Forsythia, to the dark shades of Berberry and Hazel. What combinations of light and shade may be made with these materials! Again, we have great variety in size and character of growth, from the most delicate evergreens to the rugose vigor of the Japan Rose. What striking effects may be produced when these are used in harmony with each other and with their surroundings! Judicious planting is a great art, but it is an art which insures a great and permanent reward.

LAWNS AND LAWN GRASSES.

Recognizing the paramount importance of a good lawn as an indispensable part of every rural home, we have frequently given directions for the preparation and establishment of lawns, so that but little that is new can be said on the subject. Yet the following suggestions made by Daniel Batchelder at a recent meeting of the Western New York Horticultural Society are so practical and to the point that they may serve as answer to several questions before us:

Comparatively speaking there is very little land in our country that does not require underdraining and thorough amelioration to bring it into a fit condition for good lawns on which the finer grasses will grow and keep verdurous during our almost tropical summers. Of course there are deep, sandy loams, resting on gravel bottoms, where the natural drainage is all sufficient; there are also in some situations, top and sub-soils so light and sandy—leachy—that they do not need a change of texture to the depth of 18 inches before a permanent sod can be maintained.

If a soil is a heavy clay loam it should be brought into the very best condition that draining, deep plowing, trenching, manuring and pulverizing can do; as in our climate we do not obtain the requisite amount of moisture from the air, we must seek it in the ground where, by deep culture, it can be obtained. A stiff, clay soil is not much better than a dry, sandy one for resisting drouth, as the former becomes hard and baked on the surface in dry weather.

One advantage to be derived from deep working and manuring is that the ornamental trees will do so much better on a soil thus well prepared than they would on a poor, stiff sub-soil; but the greatest benefits would be that the grasses will not burn out in dry weather. A course of trenching, either with a spade or a trenching plow, done in autumn, would be the best if the lawn is to be finished the following spring. Ground thus prepared in autumn will settle well during the winter, and would not require as much rolling to bring it down to a proper condition for seeding or for sodding.

If, however, the soil is to be prepared, and the whole work done before winter, then the land should be thoroughly rolled both before and after seeding or sodding, so as to prevent irregular settling when the whole is completed. After the plowing, manuring, and thorough incorporation has been done, then a top-dressing of lime may be put on, at the rate of about three tons to the acre, and harrowed or forked in. The seed-bed may then be made as smooth as possible by fine raking—seeding and raking being both done at the same time. A good liming at the outset will prevent the excessive increase of grubs and worms; besides, it has been observed by good farmers that the finer grasses thrive much better in pastures after the land has been limed.

In making a lawn on light, sandy soil, where there is but little humus, lime would not be of much use as an ameliorator; for such a soil has but little vegetable or carbonaceous matter on which the lime can act. The lime would soon sink in the soil, and even while it remained at the surface, it would only retard vegetation. The preparation of a sandy soil for a lawn should therefore be different from that of a heavy loam, as the plowing, trenching, and incorporation of manure, together with all other work, would be much easier done; but the manuring should be very heavy, and supplemented with some good loam and black muck, treated with a sprinkling of quick lime. Muck is not only retentive of moisture, but is, when slightly limed, a most valuable fertilizer for light, sandy land, as it brings carbonaceous matter to the soil and gives to it the important capacity of retaining nitrogen.

As to the grasses best adapted to soils and situations, it may first be said that a wet soil is hardly to be considered as a fit situation for a lawn; nevertheless there are places where a wet condition of the soil cannot well be avoided, and for such the best grasses are *Poa trivialis* or Rough-stalk Meadow Grass, *Alopecurus pratensis* or Meadow Foxtail, and *Agrostis vulgaris* or Red-top. For average good soil I have had the best results from a seeding, in about equal proportions, of *Poa pratensis* or Kentucky Blue Grass, *Festuca duriuscula* or Hard Fescue, *Agrostis canina* or Creeping Bent, *Cynosurus cristatus* or Crested Dogtail, and the Pacey Dwarf Rye Grass. The two last named are especially adapted to light, dry soils, as they are deep rooted and very fibrous, and will continue green in the dryest of weather, even when the Kentucky Blue is apparently dead.

It is a great mistake to stint the seed when making a lawn. Three or four bushels to the acre should be laid on and fairly covered before rolling down. The small granivorous birds, especially the sparrows, will be sure to eat all the seed left on the surface.

If the soil on which a lawn has been established be light and leachy, then it will be necessary to lay on every autumn plenty of rotten stable manure, not only for fertilizing but as a retainer of moisture. If the soil is a clay loam and the lawn has been properly prepared, but little top-dressing will be required, especially of heavy material.

Foreign Gardening.

GARDENING IN THE SOUDAN.

An interesting letter relating to this subject, from which we select the following extracts, has been sent by Lieut. Col. Maurice to a friend in England, who has placed it in the hands of the London Garden for publication. It is written from Abu Fatmet, on the Upper Nile:

As you wish to have some account of my Soudan gardening, I will do my best to satisfy you. You must first of all realize the fact that the cultivated portion of the Soudan, at all events up to and a good deal beyond Dongola, consists of a mere strip of country bordering on the Nile. This varies in width from nearly a mile to almost nothing. Where I am it is only about 40 yards wide. The width does not depend on the natural fertility of the soil, for wherever the rich mud of the Nile can be poured over the desert sand, in a very short time the ground is so enriched that wonderful crops flourish.

What the cultivation depends on is the slope of the ground inland. If in addition to the Nile bank, which is generally a pretty definite one, there are inland from it second and third banks, the cultivation becomes very troublesome, for the water has to be lifted over the second and third banks by native pumps as well as over the first. In some places the natives manage this, but in others, either from laziness or because in the immediate neighborhood the same result can be attained with less trouble, they do not attempt to pass the second bank, and restrict their cultivation to the ground between the Nile bank and the second bank. That is the case where I am.

The little garden, which is about 1600 square yards in extent, runs, therefore, close along the shore of the Nile just above high-water mark. It is watered by a single native pump, commonly known as a sakyeh, which draws up water from the Nile by means of a vertical wheel and rope, on which buckets are placed, which dip into the Nile, and as the wheel is made to rotate by the working of a pair of bullocks, discharge their contents into a trough, from which the water is led, by a series of channels, around the different little patches into which the natives divide the ground by a series of small banks.

When the water reaches any patch which is to be irrigated, the workman breaks a small hole in the little bank and lets on the water, which is allowed to cover the whole of the patch for an inch or two deep, and to sink well in before the surface water is drawn off. As soon as one patch has had enough, the water is let off from it on the next patch, and the same process is repeated. The cultivation depends on the patches being just a little lower one than the other, and a very slight rise in the wrong direction throws it completely out. Such is the general system.

There is a peculiarity about the air here which affects all gardening operations. From the enormous expanse of desert on all sides and the narrow strip of watered land, the air is not merely negatively dry, but has in it what I may call a positive drying quality upon everything it touches, which tends on any moist surface to produce the most rapid evaporation, and in consequence, whenever the sun is not so powerful as to counteract it, the most sudden and intense cold. During all the winter months, December, January, February, the cold at night, and especially in the early morning, is so intense, that, though I have slept in open huts in Canada when the thermometer was 20° below zero, Fahr., I have never in my life piled on my body such quantities of clothing as I have done here in the tropical Soudan, and I never so completely failed with all precautions to keep out the cold. The tendency of clothing is, of course, to produce moisture, and the moment any covering became even slightly moist with invisible perspiration, the air acted on it much in the way in which moist flannel wrapped around a bottle and hung in a breeze will almost freeze water.

Now it will not be difficult to understand how much this effect of the air would tell upon vegetation when the whole system of cultivation depends on artificial irrigation covering the whole surface, and when, during the winter months, a cold northerly breeze prevails, especially at night and in the early morning. It was quite curious to notice the effect of this in checking the growth of young seedlings. I have no doubt myself that it was greatly aggravated by the ignorance and blundering of my gardener; but I am strongly of the opinion that the natives generally, who themselves grow only Corn and the coarser kinds of Beans of various types, and follow a lazy, mechanical routine, do not know in the least how to deal best with the conditions of the climate. I feel sure that a scientific and experienced gardener, who came here and carefully studied the conditions of soil and climate for a year or two, would introduce improvements in culture that would be startling in their results. I do not think that any place can exist where really scientific treatment would be so well rewarded.

One peculiarity, which was quite unexpected in the cultivation here, is the almost entire absence of weeds. Grass of a peculiar kind grows very freely under all crops of Corn, and springs up in many places, but of other weeds disturbing the crops there are hardly any. This must be due to the fact that the soil is almost re-made each year by the mud deposit from the Nile-water.

The water in the middle of the Nile itself is now so clear, that one almost wonders where all the fertilizing mud comes from to the plants, but the fact is that during the time the Nile is rich in mud, the channel into the pit or well by the side of the river from which the buckets are filled as the wheel revolves gets choked with mud, which has to be frequently cleaned out. Heavy rainfalls of muddy spray descend from the buckets into the pit below as they are emptied into the trough above, and thus a thick, high bank of rich mud is formed all around the pit. This is continually wet, covered with growing grass, and dripping into the pit below, so that as the buckets come up, even now that the Nile is clear, they bring up with them a thick solution of fertilizing mud, to be spread over the land.

MARKET GARDENING IN JAPAN.

Market gardening is one of the most profitable branches of farming in Japan, writes S. Sato, a student at Houghton Farm, to the American Agriculturist. The farmers who are situated in the vicinity of cities and towns devote their special attention and energy to the raising of various roots and leaf crops for the consumption of their customers, and their labor is so well recompensed as to enable them to live comfortably. The market gardeners generally stand high among the farming community, and they are more intelligent and enterprising than the farmers are in the interior of the country. The latter are characterized by honesty and simplicity, and the former by business shrewdness and sagacity.

Japan has not yet come to a general use of teams and machines in the cultivation of the soil, but rigidly adheres to modes of great antiquity. The soil is cultivated mostly by the diligent efforts and untiring labor of the husbandman with implements which are of the simplest possible mechanical construction and unimproved for centuries.

The facilities with which a farmer can avail himself of implements of culture in any place and in any age, is one of the elements by which the size of a farm must be decided. This is exactly the case with the Japanese farmer. With no labor-saving machines of modern invention, he was content with cultivating a farm of small size. It has been especially so with market gardeners. Farms of from two to five acres are most common, but there are a number of market gardeners who cultivate even so small a farm as one acre. But the income of the farm is comparatively large; from $150 to $200 per acre is estimated to be a fair return. As such an income can be reasonably obtained, there is always a great demand for land in the vicinity of cities, and an offer of $600 or $800 per acre is not uncommon, while the capital thus invested brings a sure return.

Besides assisting in gardening, the wives of the gardeners often devote a portion of their time to silk culture, which, after a few months, brings a remunerative income, and thus the whole family enjoy happiness and pleasure in the quiet suburbs of cities, from the blessings of labor concentrated upon a small scale of farming.

EPPING FOREST.

Within a few miles of the great throbbing heart of London there still remains a portion of the royal forest of Waltham, which in ancient times covered a great tract of country, and extended to the very walls of the city. Its vast area included the forests of Hainault and Epping, of which some six thousand acres of picturesque woodland have, after much opposition and many difficulties, been secured for public health and recreation.

By the newly established charter of forest rights, not only wide stretches of land, after years of cultivation, have been redeemed from enclosure, and restored to the forest limits, but nearly 13 miles of almost unbroken woodland scenery, forming, perhaps, the most extensive pleasure-ground in Europe, have been formally dedicated by the Queen to the use and enjoyment of her people for all time.—*Chambers' Journal.*

Rural Life.

HOW TO ADORN A COUNTRY HOME.

"Picture to yourself a young married couple just starting on a small farm of their own, having very small means but lots of hope and good sense, with very little actual knowledge of horticulture and landscape gardening. Tell them how by inexpensive methods they may rapidly adorn and make beautiful their premises," wrote Chas. W. Garfield to Ossian C. Simonds, and the following is the latter's reply as given in "A Primer of Horticulture."

It must be encouraging to such to know that every year many wealthy men of our large cities, men who wish to spend their remaining days in enjoying the money earned during previous busy years, go into the country to live, believing they can secure the greatest happiness there. These men find pleasure in their beautiful trees, lawns and flowers, and in various features of nature with which they are surrounded. This pleasure is very pure and refining, and detracts in no way from the pleasure of others. A farmer can watch a sapling, which he can carry in one hand, develop into a noble tree, and can take delight in the natural objects around him during his whole life if he chooses to do so.

It is right for a man to enjoy life to the fullest extent. There is no habit that will give one keener pleasure than that of observing the beauties of nature. It is an inexpensive habit, too, and should last during life. The young farmer has an excellent opportunity to study our native trees and shrubs. He should do this in company with his wife, and should also cultivate his taste by reading what has been written by talented men concerning decorative planting. I remember going through a farming country where fully half the farmers had cut down magnificent old Oaks and Elms, and had planted in their places almost worthless varieties of Willows and Poplars. Here good taste was not shown, although the disposition to enjoy trees was not entirely wanting. Almost every farmer might have made his home the realization of a picture as interesting as that suggested by Milton's lines:

> "Hard by a cottage chimney smokes
> From between two aged Oaks."

It takes a lifetime for a tree to grow to a size that gives it dignity, and every effort should be made to save old patriarchs.

We should try to make our homes seem cheerful. The windows have much to do in producing this effect, and the more beautiful the views can be made, the more cheerful will the rooms be. Let us suppose a case.

Look out of the window of your living-room and note the various objects. No trees or shrubs have yet been planted; we see a naked yard separated from the street by a fence. Diagonally across the street is a neighbor's house, with his barn and the usual accompaniments just back of it. Turning your eyes toward the right you see another neighbor's house with his barn also in plain sight; still further toward the right there is a dreary expanse of fields surrounded by fences, the view being terminated in the distance by the woods. Finally, at the extreme right the view is cut off sharply by your own out-buildings in all their native ugliness. The first thing to do here in the planting line is to so place trees and shrubs that the objectionable features will be hidden. Frame the first neighbor's house by planting trees so as to hide the space on each side, thus shutting the barn out of sight, and putting in its place, as far as the view from your window is concerned, a pleasing variety of foliage. Perhaps have only the front porch of the second neighbor's house in sight, with a glimpse of his lawn and ornamental trees.

Next have a view across the fields with the woods in the distance, but break up the monotony by planting groups of trees in the corners of lots or along fences. These may deprive you of the use of a little land, but the comforting shade which they give to your stock and the rest they give to your eyes will fully compensate for this. Hide your own barn next, to still further improve the picture.

Fences are nearly always disagreeable to look at and should only be used where necessary. They suggest a limited space and a sort of confinement. If you are so fortunate as to live in a neighborhood where animals are not allowed to run in the street, you can do away with your front fence altogether. If it is necessary that the fence should remain, plant groups of shrubbery in front of it.

If you do not wish to spend any money you can produce very pleasing effects with trees and shrubs from the woods. Get them from the outskirts and open places, as such will stand transplanting better than those that are shaded. Get such as have made a vigorous growth and are perfectly healthy. Spare no pains in securing a large quantity of roots. Cut the ends of these smoothly before planting, and shorten the branches. Plant in the fall after the leaves have fallen, or in early spring.

In planting a group try to hide all the stems or trunks with foliage by preserving the lower branches, planting the tallest trees in the center, medium size next, and shrubbery graded according to size on the outside. Nature always plants in this way. Plant trees which have beautiful autumn leaves, so that they will be fully exposed to the sun and to your window, but do not plant trees so that they will keep sunshine from your house.

The ground between that which you plant and your house should be covered with a good turf. This can be secured by making the ground mellow, rich, and evenly graded, and sowing Kentucky Blue Grass and Red Top seed in September or in early spring. It may be so shady under the trees that the grass will not grow there, but do not trim them up and spoil them for the sake of the sod. Instead, plant our native Ferns and such flowers as the Liver Leaf, Trillium, Spring Beauty, Blood Root, and Twin Leaf, and you can have a beautiful wild garden with no expense after the first year. Wild Sunflowers and Golden Rod can be planted among the shrubbery and will produce a brilliant effect in autumn.

In conclusion, I will say that there is no calling which can furnish more real enjoyment than that of farming to those "who have lots of hope and sense," and who will avail themselves of every advantage offered. By "farming" is meant all soil culture.

CLEAN CELLARS NECESSARY FOR HEALTHY HOMES.

In city and country alike, it is the dark corners, the neglected and little used places in a house, which most frequently contribute to its unhealthfulness, and in ways which are the more insidious because so often unsuspected. In this respect the cellars of many houses have much to answer for, for they are generally dark and damp, with no direct rays of the sun to kill the mephitic gases which always seek those low levels, and no ventilation to disperse them, even where the cellars themselves are not made the depositories of cast-off rubbish and vegetable refuse.

Therefore the warning cannot be too often given, especially in the spring, when so many families move into new houses, and when the good housewife generally enforces the most thorough cleaning and overhauling of the year, to look to it that the cellar is not neglected. Their ceilings and walls should be plastered and whitewashed or calcimined where possible, to keep them dry and clean, and the occupants should prevent their cellars above all things else from becoming "poke holes" for rubbish; the floors should be well paved or cemented, to keep out emanations from the soil; and where this can be done, they should be ventilated by keeping open in dry weather, windows or doors communicating with the outside air.

Emanations from cellars do not kill in a night; they are but too frequently not noticed at all, although damp and mouldy cellars have undoubtedly done much to undermine the health of many families. The cellar air is taken up through the rooms of a house gradually, and in small doses at a time, but the warmer air of the upper rooms produces an upward current every time the cellar door is opened, and neglect in regard to this matter is sure to entail serious consequences because the real reason is so often overlooked.—*Scientific American.*

RURAL FELICITY.

The Chestnuts they are snapping
On the rosy-tinted fender;
The maid is in the cellar,
Where her papa he did send her
To draw a mug of cider,
To bring some Golden Pippins,
Some doughnuts and some ginger snaps
To fill the eye as chip-ins.

The hired man is greasing
His kipskins with the tallow,
The while he smears some taffy
O'er the butter-maker callow;
The little boy is pinching
Poor pussy's tail in antic;
The grand dame she is trying
To thread her needle frantic.

The horses they are rubbing
Their noses 'gainst the manger,
The cock is softly cautioning
His wives against the stranger;
The shadows on the hillside
Are turning into black;
The young folks they are hurrying
From candy frolic back.

The watchdog he is barking
At the moon above the Maple;
The tramp is softly drawing
The lock-joint of the staple;
The water wheel is silent,
The pigs lie close together;
A most convenient modus
Operandi in cold weather.

Chicago Ledger

Exhibitions & Societies.

AMERICAN POMOLOGICAL SOCIETY.

Editorial Correspondence of The American Garden.

(CONTINUED FROM OCTOBER ISSUE.)

The discussions of new fruits, Apples and Grapes especially, occupied a large part of the session, and will be printed in full in the Society's Transactions. Several excellent papers, of value to every fruit grower, were read, some of which we shall give in full in future numbers of THE AMERICAN GARDEN. Among the most noteworthy were: Injurious Fungi, by Prof. Chas. E. Bessey, and Prof. J. C. Arthur; Economic Entomology, by Prof. A. J. Cook; Best Method of Prevention or Protection from Frost, by Prof. W. R. Lazenby; Conducting Horticultural Societies, by L. B. Pierce; Lessons of the World's Fair, by L. A. Goodman; Proper Nomenclature of Fruits, by T. T. Lyon; Nomenclature of our Russian Fruits, by Chas. Gibb; The Influence of Pollen, by A. S. Fuller, Prof. W. R. Lazenby, E. Williams, Dr. F. M. Hexamer; Hardiness of Fruits, by C. A. Green; Blackberries, by G. Cowing; Improvement of American Grapes, by Geo. W. Campbell; Classification of American Grapes, by T. V. Munson; Need of Gathering Statistics, by W. I. Chamberlain; Packing and Shipment of Fruits, by Parker Earl; Fruits of the Northwest, by P. M. Gideon; Insects Injurious to Fruits, and Remedies, by Prof. Lazenby; Hard Problems in Pomology, by Prof. J. L. Budd; The Cocoanut and Where to Grow it, by E. S. Field.

Col. Norman J. Colman, Commissioner of Agriculture, who for many years has been a valuable member of the Society, attended the greater part of the session, and, on the motion of Dr. Hexamer, being invited to address the meeting, said that he believed himself to be the first person placed at the head of our agricultural interests who has been a practical horticulturist, and that during his term of office he would be anxious to do for them what he could to promote the interests of Pomology and Horticulture. He had already put machinery to work in aid of the horticulturist, and he thought there ought to be a pomological or horticultural division connected with the Agricultural Department. There never had been a time when more intelligent work was needed to be done by American farmers than now. With insect foes almost innumerable, with blights and mildews and rusts, with over-production staring us in the face, it is only the intelligent, the progressive, the industrious that will succeed. The laggards will be left behind.

The programme of the closing session consisted of three-minute responses to some twenty toasts proposed by Secretary Garfield. This was a happy conception and most successfully carried out.

A pleasing incident on the last day of the session was a drive through the suburbs of the city, in private carriages furnished by some of its public-spirited citizens. This was a most agreeable occasion, affording the guests an excellent opportunity to view the many elegant suburban residences, beautiful gardens and lawns, and picturesque scenery, leaving bright memory recollections of the delightful days spent in this charming city.

AMERICAN FORESTRY CONGRESS.

The annual convention of this association, held at Boston, was one of the most important meetings ever held in the country. It was proposed to secure the appointment of a committee on forest legislation, and to draft effectual laws for the preservation of forests, both national and State. The active coöperation of all interested in these important measures is earnestly to be desired. E. B. Fernow, 13 Burling Slip, New York, is secretary of the congress.

AMERICAN INSTITUTE OF NEW YORK.

The annual exhibition of the Institute, which in reality represents the Agricultural County Fair of New York, opened on Sept. 30th with a grand Floral Display in the upper hall of the exhibition building on Third Avenue and 63d and 64th Streets. This arrangement, by which all the plants and flowers could be seen together, was a decided improvement over that of former years, by which they were scattered on the ground floor among the various departments. The disposition of the exhibits was tasteful and convenient, so that visitors could conveniently examine every plant and flower.

Probably the most valuable exhibit was John Finn's collection of Palms, Ferns, and various stove and greenhouse plants, in all some 200 specimens, and among them many of great beauty and value. Hallock & Thorpe were the largest exhibitors, being represented in almost every department, and as usual taking the lion's share of the prizes. W. C. Wilson exhibited some 300 plants, comprising a very great variety. His Orchids and Nepenthes formed an important center of attraction.

Floral designs, baskets, bouquets, etc., were represented in all imaginable shapes and combinations. The most remarkable feature about this class was that although the exhibits varied widely in taste and conception, there was not a single ugly design on exhibition. In the arrangement of wild flowers especially the skill and taste displayed by the exhibitors was of a high order.

From October 7th to 14th the Exhibition of Fruits and Vegetables was held in the same room. In point of quantity and number of exhibits we have seen better fruit displays at the Institute, but we doubt that at any previous exhibition there were so many perfect and superb specimens on the tables as on this occasion. Ellwanger & Barry, Rochester, N. Y., exhibited 100 varieties of Pears, nearly every one of which was a model of perfection. "Mikado," a Japanese variety, golden yellow with black spots, was declared by everyone the most handsome Pear on the tables. Among other highly attractive ones were Mad. von Siebold, Bonsoc, Howell, Superfine, Angouleme, Flemish Beauty, Pound, Anjou, Columbia, Cananda-gua, Bosc, Fred. Clapp, Diel, etc.

T. S. Force, Newburg, N. Y., showed fifty varieties of Pears, and the same number of Apples of rare excellence. Among other exhibitors in this class we noticed D. Van Alst, J. A. Wagener, Geo. Mathews.

In the Grape division E. & J. C. Williams, Montclair, N. J., were awarded the first honors; T. S. Force, although he had to content himself with a second prize, made a most excellent exhibit; of special interest was a collection of native, and one of hybrid seedlings raised by Dr. W. A. W. Culbert, some of which are of high promise. Among the choicest specimens we noticed Lady Washington, Jefferson, Moore's Early, Worden, Silver Dawn, Catawba, Brighton, Delaware, etc.

In the Vegetable Department the same excellence of exhibits was notable. Among the principal exhibitors were Geo. Mathews of Great Neck, L. I., R. Brett, gardener to J. R. Pitcher, Short Hills, N. J., F. B. Kelly, Middlehope, Orange Co., N. Y., and others.

An entirely novel feature is the display of Hardy Coniferous and Evergreen Plants, which commenced on October 16th and continues one month. To our taste this is the most attractive and most interesting exhibition of the series, and the exhibitors—S. B. Parsons & Sons, Flushing, N. Y., especially, whose choice and large exhibits are the admiration of every visitor, deserve handsome recognition. It is to be regretted that the schedules for this special exhibition could not have been sent out earlier in the year, so as to afford nurserymen at a distance an opportunity to prepare specimens for exhibition purposes.

As a means for the convenient study of hardy, choice Coniferous trees this exhibition offers an unequaled opportunity, as every specimen is plainly and correctly labeled, and almost every species and variety of Spruces, Pines, Arbor Vitæ, Cedars, Cypress, Junipers, Taxus, Retinisporas, and evergreens of every kind that are hardy and desirable in this latitude is here represented. No landscape gardener, or lover of beautiful shrubs and trees, should neglect to visit this exhibition.

SOCIETY OF AMERICAN FLORISTS.

THE MEAT OF THE MEETING.

Special Correspondence of The American Garden.

(CONTINUED FROM OCTOBER ISSUE.)

In the discussions which continued on from the matter of last issue, considerable study was given to

STEAM VS. HOT WATER.

Pres. Thorpe said the fact that hot water heating of greenhouses has been in successful operation for twenty years, is sometimes used as an argument against any change to steam, and yet the same arguments were used in favor of the flue system when hot water heating was first agitated some thirty years ago. There are many failures in hot water heating and many crude and preposterous ideas are put forth. "It is useless for me to-day to ask which is the best, hot water or flues. Hot water has had to fight for the position it holds. The progress that steam heating has made in the past six years leads many to think that it is the true method of heating and that hot water must go. There is a good deal of truth in the statements made for it, and many establishments are most successfully heated in this manner. We have to admit some failures as great as were the failures of hot water upon its first introduction. It is an established fact that not more than a certain amount of heat can be extracted from a given quantity of fuel, and that in all cases the best is the cheapest, also that the fewer impediments are put in the way of extraction the more satisfactory are the results. It follows that

the more complete the apparatus used and the more capable of the most economical distribution of the heat engendered, the better; the more complete the circulation without friction or other impediments, in proportion will the success or failure of either steam or hot water be."

Messrs. Taylor of New York, Bachman of Pittsburg, Spaulding of Norwich, Ct., and Hamilton of Allegheny spoke in favor of steam. Mr. Bachman claimed to have been the first to apply steam for this purpose. Mr. Spaulding was very enthusiastic in favor of the new system. He would apply it to private as well as commercial houses and claimed a saving of thirty-three per cent in fuel. Steam is especially economical in March and April, as the pipes can be cooled or heated very rapidly and the temperature more easily controlled. Some one urged the objection that rapid cooling was a disadvantage that might work disastrously in very cold weather if the furnace failed from any cause to generate sufficient steam.

Mr. Hendricks formerly used square flues and tile, but is now using hot water, and he advises those who were well fitted up in the hot water apparatus to continue its use. Greenhouses built upon a different plan from those at present in use would be necessary for steam heating. He had little doubt that steam would be the mode of heating at some time in the future.

John Henderson thinks steam more economical than hot water and advised its use in new houses.

Robt. Craig of Philadelphia who runs thirty houses and uses both steam and hot water, sees little difference in the expense of producing the same amount of heat. Hot water apparatus is far from perfect, and were the same efforts made toward perfection in it that are being put forth in introducing steam there would be no need of changing.

HAIL INSURANCE.

Many Western members had been severe losers by hail storms during the past two years and were anxious to have a Protective Association organized to insure members against loss. A circular upon the subject was sent out in the spring, 1600 reports being solicited; 244 answers were received and 102 reported damage. The least number of feet of glass lost in one year by one man was 10, the greatest 7,500. Many of those present were in favor of forming an underwriting association. The subject was referred to a committee to report at the next annual meeting, which is to be held in Philadelphia on the second Wednesday of August, 1886.

An invitation of the C. H. & D. R. R. to visit the soldiers' home at Dayton on the following day (Friday) was accepted, and the next morning about 360 persons took the train for Dayton. A meeting for the election of officers for the coming year resulted as follows: *President*, John Thorpe, Queens, N. Y.; *1st Vice-President*, Robt. Craig, Phila.; *Treasurer*, M. A. Hunt, Wright's Grove, Ill.; *Secretary*, E. G. Hill, Richmond, Ind. As a token of esteem the members presented a valuable gold watch to Pres. Thorpe and a brooch to his wife. Speeches by Allen, Hendricks and Sanders were pertinent and witty.

The report on effecting better security and facilities for the shipment of cut flowers, read by Mr. Long of Buffalo, N. Y., was adopted, as well as the proposed Trade Mark consisting of a large Rose Leaf with the imprint F. F. (Fresh Flowers.)

After some final resolutions and mutual congratulations upon the success of the occasion the meeting adjourned, all being well pleased with what has been accomplished, and more hopeful still of the future usefulness of the Society.

MASSACHUSETTS HORTICULTURAL SOCIETY.

Boston "Flower Shows" differ essentially from those of other cities. There is an air of enthusiasm and refinement about them which is not found elsewhere. While in New York especially, nearly all the exhibitors are professional growers who make the best possible use of the "shows" as an advertising medium, the principal exhibitors in Boston are amateurs like Hunnewell, Ames, Payson, Pratt, Wilder, Kidder, and many others who take pride and pleasure in thus contributing the treasures of their gardens and greenhouses for the public good. Not that there are not as choice collections of plants elsewhere, but their owners—with but very few praiseworthy exceptions—are not possessed of sufficient liberality and public spirit to allow their gardeners to bring them to public exhibitions.

The annual exhibition held from the 15th to the 18th of September was a grand success in every respect, and might well have challenged comparison with any previous one. The committee of arrangements, under the able chairmanship of E. L. Beard, have fairly outdone themselves in the artistic and effective arrangement of the plants. The upper hall in which the plants and flowers were displayed, certainly was never before so crowded with such a wealth of beauty in flower and foliage, native and foreign, tropical and from the temperate zones. The fruits and vegetables in the lower rooms were perhaps not so abundant as in some years, but any deficiency in this respect was more than made up for in the overflowing riches of the plants and flowers.

A large, magnificent specimen Palm, a *Cocos Bonnettii* from S. R. Payson, occupied the center of the hall, and spreading like a fountain completed the pyramidal outline, forming the crowning beauty to the whole arrangement. Mr. Payson also contributed a large stand of plants, among which was a remarkably fine specimen of *Croton variegatum* and another of *Alocasia Thibautiana*. The tank of Water-Lilies from E. D. Sturtevant of Bordentown, N. J., attracted great attention. It was superior to the similar displays which he has made in former years, and contained a great number of beautiful flowers, well worthy of the admiration they received. The tank also contained specimens of Nymphaeas from N. Simpkins of Yarmouthport. H. H. Hunnewell contributed two large groups of plants; in the center of one was a superb specimen of *Cissus discolor*, and the other comprised a plant of *Asparagus plumosus scandens*, in flower, the first time it has blossomed here. F. L. Ames also had two large groups, one of which had a large plant of *Anthurium Veitchii* as the crowning feature; the other included two new Crotons of remarkably fine color, *C. Montfortiensis* and *Dayspring*. Mr. Ames also contributed a plant of *Acacia cristata*, or devil flower, which certainly had rather a diabolical look. But to balance this there were two Orchids, which are always eagerly inquired after, the *Odontoglossum grande*, or baby flower, from D. Allan, and the *Peristeria elata*, or dove plant, sometimes called Espiritu Santo or Holy Ghost flower, from H. P. Kidder. Mr. Kidder had a large stand filled with plants, among which were some fine Fuchsias and the rare *Croton illustris*. G. A. Nickerson sent besides other fine plants an excellent specimen of Croton Queen Victoria. David Allan, gardener to R. M. Pratt, had three large stands of Ferns and other plants, including two new foliage plants, the *Croton Chelsonii* and *Alocasia Sanderiana*, besides *Ixora Westii*, a new flowering plant. Among the Orchids we noticed a plant of *Saccolabium Blumei*, with a most beautiful spike of flowers, from E. W. Gilmore. John L. Gardner had a fine specimen plant of *Eurya latifolia variegata*, and C. M. Hovey filled the stage with a great variety of fine plants. But time would fail to speak of the Sphærogynes, Nepenthes and multitudes of others, and we can only allude to the cut flowers of Dahlias, Asters, Gladioluses, Marigolds, Petunias, Pinks, Cockscombs, Nasturtiums, all of which were represented by the best specimens that nature and art in coöperation can produce, or of the wild flowers which loving hands have brought from their native haunts.

The Grapes, both foreign and native, the Plums and the Crab Apples, filled a table in the library room, which represented an exceedingly rich display of color. Of foreign Grapes, David Allan had a superb collection, comprising a bunch of White Syrian weighing six pounds and an ounce, and one of Alnwick Seedling weighing five pounds five and a half ounces. Of native Grapes, John B. Moore & Son had fine specimens of Moore's Early and Francis B. Hayes; H. Barker of Lady Washington, and W. C. Strong of Worden. The Apples and Pears were in the Lower Hall. This being the off year for Apples a large display was not expected, but the specimens were excellent. The Pears also were so uniformly good that it is difficult to particularize, but the Souvenir du Congrès, from their size and beauty, were perhaps the most remarkable.

A very fine exhibition of vegetables was made. Tomatoes were not quite so abundant as usual, but the Celery, Egg Plants and Greenflesh Melons were plentiful and of excellent quality. The Cauliflowers were not large, but very perfect. Hon. J. J. H. Gregory had an interesting collection of twenty-four varieties of Corn, all planted at the same date to determine their earliness and productiveness.

A pleasing and interesting feature formed the collections of beautiful and rare evergreen trees from W. C. Strong and J. W. Manning, which lined the halls of the building. But, although we have barely given an outline of this memorable display, we find our allotted space already filled, and must therefore leave the rest to the imagination of the reader.

The list of prizes awarded would fill more than a page of THE AMERICAN GARDEN. Those interested may, we suppose, obtain it from the society's efficient secretary, Mr. Robert Manning, Horticultural Hall, Boston.

Gardening is the most beautiful, the most healthful and most enjoyable employment for man or woman, for youth or old age.

SUB ROSA.

Yes, we cheerfully admit, sub rosa, that that Jewell Strawberry cut was inverted in a part of the edition. A brilliant printer thought he knew Strawberries better than the editor, and in our absence just tipped the cut over. We saw the blunder just as he was flattering himself that he had done a smart thing, and the Jewell was put on its proper setting. Unfortunately, between ourselves, some of those faulty copies got into the hands of kindly men who will criticise a fault where they would never dream of praising a virtue, and have sought to make our ears tingle at their comment. But, dear youths in journalism, our skins are tough. Pelt away with your mustard-seed shot. We don't care. Look out for your glass houses, though.

* * * *

Are Messrs. Vaughan and Thorpe boycotting? *The American Florist* advises that seedsmen should not advertise in papers which offer seeds and plants as premiums, and argues concerted action to this end. Verily that is brilliant. How would you like to have all seedsmen and florists refuse to advertise in *The Florist* because its owners make a business of selling seeds and plants to its readers? The cases are virtually the same. The premium seeds and plants are really sold, though at a low price, in combination with the papers offering them. Glass houses, friends! Boycotting is bad business.

* * * *

One valued reader—valued because he is a subscriber!—is displeased because THE AMERICAN GARDEN is to cost $2.00 a year hereafter. He says the magazine is good, and "the price is all it is worth." Bless you, dear reader, you just wait till we show you how much more valuable THE GARDEN is to be. Look at this issue as a beginning! Then please observe that you and everybody else may subscribe now for any number of years, and by reason of our premium combinations and the improvements in the magazine get big interest for your money. But every other subscriber who has expressed himself on the subject emphatically endorses the proposed rise in subscription price, thinking THE AMERICAN GARDEN well worth the money.

* * * *

Rural journalism is just now enjoying a fusilade of new garden papers being fired at the public by various seedsmen, florists and publishers. *Popular Gardening* is a legitimate periodical by Ransom & Long of Buffalo, edited by Mr. Long of Landscape gardening fame, we believe. Its name implies its character, and it is well worthy of patronage. *The Michigan Horticulturist* is edited by Chas. W. Garfield, and so of course is a worthy effort, sure to be popular in the section whose fruit growing interests it is designed to promote. *Orchard and Gardening*, edited and published by Jno. T. Lovett, the brilliant nurseryman of Little Silver, N. J., is necessarily bright and interesting, like most of Mr. Lovett's work in horticulture. *The American Florist*, being especially for florists, is perhaps appropriately published by florists, with enterprising Mr. Vaughn of Chicago for leader, and Mr. John Thorpe for the proposed working editor. We welcome every honest effort to promote horticulture, but we believe that even a trade paper should be entirely disassociated with any mercantile house. It is human nature for a man to look after his own interests first. *The Mayflower* is a neat and bright little organ for that skillful advertiser, Mr. John Lewis Childs of Floral, N. Y. If we have overlooked any new claimants for public favor in this field (this garden, perhaps we should say) we should be pleased to shake pens with them if they will show us their olive branches.

* * * *

American Apples are judged by quality in Europe as well as at home. It is no more use to send seconds to Liverpool than to Broadway or Faneuil Hall. Recent cable reports indicate large sales. October 5, Kings brought $4.25 to $4.75 per bbl. of sound fruit; Baldwins $3.25 to $3.75; Greenings $3.00 to $3.25. On October 12, prices ranged about twenty-five cents lower than the preceding at Liverpool and Glasgow, with Northern Spies, Seek-No-Furthers and Spitzenburgs at $3.25 to $3.50. On October 14 the quality and prices were lower by fifty cents on most sorts offered. Oct. 19, 6000 bbls. were sold in Liverpool under a brisk demand. Newtown Pippins were too green for the fancy trade and brought $3.00 to $4.50. Other prices were about the same as on the 12th, with Greenings, Spitz and Spies twenty-five cents lower. Kings in Glasgow brought $4.25 to $4.50. On October 21 the demand was active with prime Newtown Pippins at $4.75 to $5.25; other sorts the same as on the 12th; Hubbardstons at $3.25 to $3.50, Golden Russetts $3.00 to $3.25. Careful selection and picking for any market always pays.

* * * *

There is rank injustice even in the craft of gardening, a calling that should soften any hard heart, and make a man just. Mr. F. W. Sowby, now at 1411 Yardly St., Philadelphia, is one of the sufferers. He is said to have had a good business, and under contract took a large lot of plants to no-matter-where, set them out as ordered, and—couldn't get his pay, which ruined him financially, and he would have suffered worse save for the charity of a certain great soap maker who is helping him along until some gentleman appears who wants a gardener. Alas that charity must help any follower of the art-beautiful to his daily bread!

* * * *

Advertising is the life of trade. So runs a trade proverb, that is especially applicable to the business of seed and plant growers. No other branch of industry distributes so many or so well-printed catalogues, or spreads its advertisements so liberally. None receives or sends out so large mails. None knows so well the value of advertising. Many, in fact most, of the leading houses now employ no, or very few, travelling salesmen, yet for sales depend chiefly on advertising, on catalogues and a reputation for good goods. And the winds of rumor report that during the coming season advertising will be used still more freely than heretofore; but what is more important, the *larger* advertisements will be confined more closely to the *better class* of papers and magazines.

* * * *

Confidentially, dear reader, don't you think that this issue of THE AMERICAN GARDEN is a pretty good one? Don't you think that it would be a proper thing for you to suggest to your friend that to read it for a year would be worth something to him or her in larger returns from his land, in a more beautiful home, and in greater pleasure in the work and life of the seasons as they come? Furthermore, you can safely tell your friends that the magazine will be even better in the future than it is now, for evidence of which please show them our prospectus for 1886 in the first pages of this number. Any effort that you will thus kindly bestow upon your friends will be duly appreciated by them, by the editor and especially by the publisher.

* * * *

Visitors to the Philadelphia meeting of the Society of American Florists may anticipate a treat, as Mr. Geo. W. Childs has decided to invite them to visit his beautiful place at Wootou, where of course they will be entertained as only Mr. Childs at Philadelphia can entertain a party of men and women, be they florists or princes.

PROFITABLE GARDENING.

Profits in gardening do not, as a rule, increase with the extension of the area cultivated. A few acres favorably situated near a good market, and skillfully managed, will almost always yield larger profits from the capital invested, and the labor employed, than large farms. Much of this is naturally owing to the better prices which products bring when sold direct to the consumers, but more to the fact that better care and closer attention to details can be given on a smaller scale than on a larger one. From the moment that the owner has to depute to others part of the supervision his profits will commence to diminish.

Judicious selection of a location advantageously situated to markets, and for obtaining labor, manures and other necessary supplies is as much and as important a part of profitable gardening as the growing of crops. Both must be thoroughly understood by those who would succeed. To teach our readers the principles and methods how such success may be obtained, and to inform them of the practice of those who have been most successful in their specialties, is one aim of THE AMERICAN GARDEN.

There is no secret, no mystery about successful and profitable gardening. Adaptation of methods and means to circumstances, studious and timely attention to details, and the same application, industry, and circumspection that lead to success in other business will surely produce satisfactory results and ample profits. All cannot succeed in any business, as not all possess the same qualifications, but to those who make themselves masters of the situation, gardening offers as liberal rewards as any calling.

METROPOLITAN MARKETS.

IN BRIEF PARAGRAPHS FOR THOSE COMMERCIALLY INCLINED.

A review of the month previous to October 15th.

FRUITS.

Apples.—Golden Pippins were the handsomest and the favorite eating Apples in market. They have brought one price—30 cts ½ pk, $1.50 a bbl; selected, $2.00 a bbl. Gravensteins were in good demand at 40 cts a pk; Malden's Blush are also 40 cts a pk, selected, $2.25 a bbl. Greenings, 25 cts pk, $1.50 a bbl; Baldwins $1.50 a bbl; King, $2.00. For table use the two latter sell at 35 cts per doz.

Bananas.—Yellow, 40 cts a doz, 75 cts a bunch; the supply of Red has fallen off, which advanced prices to 60 cts a doz, $1.75 a bunch.

Crab Apples have been unusually sound, large and richly colored. The demand for preserving, making into sweet pickles and jelly annually increases. The Siberian is preferred. Price, 70 cts a pk, an advance of 20 cts on our last quotations.

Cranberries are very plentiful; have fallen from 20 to 10 cts a qt in a fortnight.

Grapes.—Isabella has not appeared on fruit stands this season. All other sorts are plentiful. Malagas arrive in abundance, mostly in good condition; 30 to 20 cts a lb. Concords cost 50 to 60 cts a 10-lb basket. Niagara and Rebecca, 30 cts a lb. Delawares have brought 20 cts a lb in the markets, and 30 cts on Broadway. Catawbas have sold for 15, 20 and 25 cts a lb. California Tokays are $1.50 for a 5-lb box, or 35 cts a lb. The light-colored domestic Grapes were 10 cts a lb. Hothouse Grapes cost $1.50 to $2.00 a lb. There has been but slight fluctuation in the price of Grapes in a month.

Lemons.—Messinas are scarce at 30 to 35 cts a doz, $4.50 and $5.50 a box. Floridas, 25 and 30 cts a doz, $4.00 and $4.50 a box.

Limes are much in demand at 15 and 20 cts a doz.

Oranges.—Jamaicas are best now, having gradually improved. They retail at 60 to 70 cts a doz; by bbl, $6.50 and $6.75. Messinas 40 to 65 cts a doz, $4.50 a box.

Pomegranates find a fair sale at 10 to 15 cts each. They have a peculiarly tart and cooling flavor that is refreshing to feverish invalids.

Peaches have been excellent though now pale and wrinkled. The "Salway" is an excellent late yellow sort that has been preferred to Smocks. They have cost $2.00 a basket. Crawfords have ranged at $2.25 to $4.50 a basket; Smocks$ 1.75 to $2.50; small New Jersey Rareripes $2.00 to $2.50 a basket; White Heath for preserving, $1.25 to $2.50 a basket. This fruit kept in cold houses along the Hudson, will appear until December in Broadway stores, and will bring a large price.

Pineapples.—A few Havana Pines appear at 30 to 70 cts each.

Pears.—Seckels cost 75 cts and $1.00 per pk basket early in the month; now $1.75 and $2.00. Vicar of Wakefield and "Pound" Pears for preserving, are 40 cts a pk. Duchess, Sheldon and Bartlett, selected for table use, bring 40, 60 and 75 cts a doz.

Plums have been unusually plentiful and lasted satisfactorily. German Prune Plums have sold from 20 to 35 cts a qt. Magnum Bonum and Golden Drop cost 25 cts. Damsons have ranged from 50 cts to $1.75 a pk.

Quinces.—Three varieties have been in market over a week, the Apple, Pear and Orange Quinces. The former are preferred and bring 75 cts per basket of 19. Smaller fruit, 40 to the basket, bring 50 cts. The ordinary run sell for $1.25 a bush.

Wintergreen berries are in good demand; 20cts qt.

Nuts.—From Dominique come the pits of Cashaw fruit, which are rich, sweet and delicious when roasted. The nut is crescent in shape and is in flavor between a Peanut and Almond: $1.00 a lb.

VEGETABLES.

Aquarte or *Alligator Pear*, from Havana, is somewhat like a Cucumber in flavor, and makes a refreshing salad. It has a tough, green, smooth skin, and large pit. 30 cts each, 4 for $1.00.

Artichokes.—From France: 25 and 30 cts each.

Beets remain at 5 cts bunch, $3.00 a 100 bunches.

Brussels Sprouts, imported 50 cts a qt, $7.00 a bush; American, 25 cts a qt, $3.50 a bush.

Beans.—String Beans are 20 cts a small measure, Butter Beans same. Limas 15 cts a qt, $1.50 a bag.

Cauliflowers are excellent from Long Island at 5 to 30 cts each, according to size, $1.50 to $4.00 a bbl of 15 to 50 heads.

Cresses are 3 and 5 cts a bunch, not new sold by qt.

Cabbages are 7 to 12 cts each, average $1.25 a doz at retail.

Corn.—Sweet Corn is prime and plentiful; 15 cts a doz, $1.50 per 100 ears.

Celery is plentiful at 10 cts a bunch, $1.00 a doz.

Carrots remain at 5 cts a bunch, $1.50 a bbl.

Egg Plant, plentiful and fine, 5 cts each, 50 cts doz.

Gherkins are very scarce, particularly the small ones; 30 cts per 100.

Herbs.—New herbs cost 2 cts a bunch for Thyme, Sage, Sweet Marjeram and Summer Savory. For Chervil and Tarragon, 5 cts is charged.

Lettuce is delicate and tender, and is what is called "Boston;" 5 cts for 2 heads.

Mushrooms.—Field Mushrooms have brought 50 cts to $1.00 a lb, hothouse ones $1.50 a lb. At present they are all out of market.

Nasturtions are in brisk demand for pickling; 40 cts a qt.

Okra.—Green Okra, 60 to 75 cts per 100, now 60 cts. Large quantities have been sent from Havana, but it was too early to bear transportation, and it was yellow and tough; 25 cts per 100.

Onions are 10 cts a qt for white, and 8 cts for red. The latter are $2.75 a bbl, and the former are $3.50 a bbl. Small, white, pickling Onions bring 25 cts a qt. Spanish Onions are 10 cts a qt for small ones; large ones sell by the lb at 5 to 10 cts, according to the locality where purchased.

Oyster Plant is $1.00 and $1.25 a doz bunches, 15 to 20 cts a single bunch. It is unusually large of stalk and tender.

Potatoes.—Potatoes are prime only in certain localities; those grown in sandy soil are excellent, but many of those from clayey districts have dry rot. Long Island Early Rose, Beauty of Hebron, Burbank and Queen of the Valley are offered as the safest to purchase; $2.00 to $2.25 a bbl retail, $1.50 to $1.75, wholesale.

Potatoes, sweet, from Delaware and Virginia are in equal demand, at 15 cts per lb or small measure; $2.00 and $2.50 a bbl. New Jerseys are inferior at 10 cts a small measure.

Peas.—Green Peas are excellent, selling for 30 cts ½ pk and $2.25 a bag.

Peppers.—Chili Peppers for pickling are 60 cts a qt, Spanish 5 cts each.

Parsnips, large and fine; 5 cts a bunch, $3.00 a bbl.

Radishes are crisp and tender; one ct a bunch; they have varied from 3 to 4 cts a bunch for a fortnight.

Squash.—Marrows are 10 and 15 cts each, according to size; Crook-necks, 5 cts each.

Turnips.—Yellow or Russian cost 8 cts a bunch. White bring 10 cts a bunch, $1.80 a bbl.

FLOWERS.

Chrysanthemums.—Plants in bloom are 50 cts to $3.00, according to size and variety. There are few standards offered, the cut pompons being 25 cts a doz at retail.

Carnations.—Buttercups are the costliest; at wholesale $2.00 per 100, at retail, 5 and 7 cts each. Hinsdale, La Purite and Grace Wilder, cost $1.50 per 100, wholesale, 4 to 5 cts each, retail. White Carnations wholesale at $1. a 100, 2 cts each, retail.

Lily of the Valley brings $8.00 per 100, wholesale, and double that at retail. Selected spikes for weddings are sold at fancy prices.

Mignonette is not handsome as yet, but is loved for its odor, and the "Spring-flower *chic*" it bestows on a bouquet; 15 and 20 cts a bunch wholesale, 25 cts retail. A "bunch" is 12 spikes.

Roses.—The Bennett Rose ranks all others in price, costing $10.00 per 100 wholesale, retail $2.00 a doz. American Beauty brings but $4.00 a 100 wholesale, $1.50 a doz retail. La France are $8.00 per 100; selected, very large, $20.00 a 100. At retail they bring from $1.50 to $3.00 a doz. Ten Roses are 75 cts a 100 and retail for $1.00 a doz. Perles des Jardins are $1.50 per 100 and $1.00 a doz. Cornelia Cooks cost $8.00 per 100, wholesale, and retail for $1.50 a doz.

Smilax is 15 cts a string wholesale, 25 cts retail.

Violets.—Marie Louise are just appearing. They cost 50 to 75 cts a bunch wholesale, retail for $1.00 and $1.50. Russian Violets are 50 cts per 100 wholesale, 75 cts retail.

NOVELTIES.

Under this heading we propose to notice all new varieties of Fruits, Vegetables, Flowers, and Ornamental Shrubs and Trees introduced by reliable houses here and abroad. We wish to have it distinctly understood, however, that the fact of a novelty being mentioned here does not imply our endorsement or recommendation of the same, the descriptions being mostly those of the originators or introducers. This column is intended merely to serve as a record of the novelties of the day.

FRUITS.

Grape.—"Nectar," B. F. Merriam, O. A chance seedling; white, large bunches, excellent quality, productive, earlier than Concord.

Lemon.—"Bonnie Brae," H. M. Higgins, San Diego, Cal. A seedling of the Sicily Lemon; rind very thin; pulp tender, melting; rich flavor.

Peach.—"Ford's Late White," John Perkins, Moorestown, N. J. Claimed to be the latest white freestone Peach in cultivation.

Peach.—"The Globe," Christopher Shearer, Tuckerton, Pa. Freestone, golden yellow with red blush; the best, largest, and most prolific variety for that section.

Pear.—"Mahoning," M. Milton, Mansfield, O. Resembles Fred Clapp in appearance, but is much larger and better flavored. A thrifty grower, bearing early.

Plum.—"Botan," introduced from Japan. Purple, large; tree a strong, handsome grower, with large, glossy foliage.

Plum.—"Desotto." This was first introduced by W. P. Rupert of Seneca, N. Y.

Plum.—"Moore's Arctic," F. P. Sharp, Woodstock, N. B. Described as wonderfully prolific, hardy, and curculio-proof.

Plum.—"Simon." Introduced from the Orient. Prof. Budd says of it: It will be the King of fruits—better than any Apricot.

Raspberry.—"Key's Prolific," Black Cap. Equal to any of the best standard varieties, and superior in flavor.

Strawberry.—"Sunapee," Susan P. Fowler, Vineland, N. J. Early, sweet, fine flavor, vigorous plant, perfect flowers.

VEGETABLES.

Potato.—"Early New Zealand," W. M. Benninger, Walnutport, Pa. Claimed to be ten days earlier than Early Rose.

Potatoes.—Out of forty-two new kinds competing at the recent International Potato Exhibition in London, England, only four were considered worthy of Certificates. These were "New Flake," from M. Ironsides; "The Colonel," from W. W. Johnson & Son; "Faith," from Robert Fenn; and "General Gordon," from C. Fidler.

(See also page 263.)

SAVORS OF THE SOIL.

HOOKED, HARROWED AND HARVESTED.

How to start a greenhouse: try a cyclone.

When a man gets hard up for provision, it is mighty risky to let your hens run in his garden.

Prairie land is generally barren of timber. When you are in the woods it is reasonable to believe that you are not on the prairie.

Some one writes inquiring if guano is good to put on Potatoes. It may do for those who like them that way; gravy and butter are considered better.

Small boy, watching his sister iron a piece of work with a bird's nest of eggs done in crewels on it: "I say, sister, if you keep the iron so long on those eggs, you'll hatch 'em!"

Land agents always tell the truth. Some time ago one agent was suspected of telling a lie, but upon investigation it was found that the immigrant had simply misunderstood him.—*Arkansaw Traveller.*

Our *Irresistible* *Offers.*

THE AMERICAN GARDEN one year
OUR COUNTRY HOME one year
GOOD CHEER one year

for $1.25

If ordered before JANUARY 1, next.

☞ A year's subscription to *Our Country Home*, or to *Good Cheer*, will be given to any one who sends in a *new* subscription to *The American Garden*, and the same to the new subscriber; **Both** of them to any one who sends in **2 new** subscriptions to **The American Garden**, and the same to **both** of the new subscribers.

After Jan. 1 the subscription price of The American Garden will be $2.00.

GOOD CHEER.

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☞ *Continued on page 279.*

WOMEN WORKERS
IN THE GARDEN AND FIELD.

Susan Power tells of a woman gardener who made $3,000 on one acre of land, presumably from flowers and plants.

A New Jersey woman is one of the most successful small fruit growers in that fruit growing State. We hope to give our readers the particulars of her enterprise.

Indiana has 2,252 women engaged in the honorable occupation of farming; 66 authoresses; 532 boarding-house keepers; 107 book agents; and in the other vocations women are well represented.

A lady at Whitby, England, boasts of a Marshal Niel Rose tree eighteen years old, which now measures horizontally 48x54 feet. The average depth is five or six feet, and last year 2,500 Roses were plucked from it.

It is worth everything to a woman, if by misfortune it becomes necessary for her to look after property, and to take care of herself, to have some practical knowledge of what she has to do.—*Col. F. D. Curtis.*

Women are the most successful retail dealers in fruits and flowers, on account of their care in selecting the best specimens for their counters. There is a woman in Boston who from a little out-door fruit stand, has become "well off" by getting a reputation for the best. She is not the traditional Apple woman, but looks as neat, fresh and attractive as her wares.

Women who are not exactly "workers in the field," are the Dakota girls who are "holding down" quarter sections. Under the law, if they put up a shanty on a quarter section of land and sleep in it one night a month for six months, and then make some improvement on it during every six months for five years, it is their land. And it is said that many are found ready to practice "equal rights" with men in this easy getting of real estate.

We know a farmer's daughter in Bucks county, Pa., who had two turkey hens this year from which she got and set 113 eggs. The pigs destroyed two nests of eggs after they were set for incubation; but she succeeded in getting sixty young ones raised in spite of wet weather, bad luck, and the usual vicissitudes of the business. She says she is going to get enough of money out of her two turkey hens to buy herself a first-class sewing machine by Christmas, besides having a nice turkey for Thanksgiving and one for Christmas dinner.—*Farm Journal.*

In France, a farmer's daughter becomes the head of the dairy. She knows nothing about decorating ginger jars or strumming waltzes on the piano, but she turns out of her skilful fingers delicate cheeses and butter, which command the highest price in the Paris and London markets. So high do the Breton dairies rank, simply in consequence of the personal supervision of them by the farmers' wives and daughters—women with intelligence as well as hands—that it is not uncommon for a dairyman to give his daughter a dower of from $15,000 to $20,000; much of it the product of her own skill in detail work and management.—*Tribune.*

Answers to Correspondents.

Covering Grapevines.—*Q., New York.*—Loosen the vine from the trellis, lay on the ground and cover with a few inches of soil, especially the ends of the canes.

Stephanotis not blooming.—*J. C. H., Los Angeles, Cal.*—In rich soil this plant is apt to run too much to foliage to the loss of flowers. It needs full sunlight, and should be trained close to the glass: it bears severe pruning, and after the plant has covered the space devoted to it, all the strongest shoots should be cut back every year in December or January.

William Francis Bennett Rose.—*Subscriber, St. Louis, Mo.*—This Rose was produced by Henry Bennett at Shepperton, Walton-on-the-Thames, London, England. The stock offered in America was bought by Chas. E. Evans, of Philadelphia, Pa., for $3750, under the restriction that none of the plants should be sold before four years. This time having elapsed plants may now be had from all leading florists and nurserymen. For description and illustration see June number of this year.

Propagating Azaleas, etc.—*F. C., Elyria, O.*—Our greenhouse Azaleas, *Azalea Indica*, are easily propagated in spring, by cutting of the half-ripened young shoots.

Poinsettias are increased by cuttings in May. The cuttings should be allowed to dry a day or two before planting, when they may be set in small pots, or in a propagating bench, and transplanted after becoming rooted.

Calceolarias are raised from seed sown in August, and as soon as the young plants are of sufficient size to handle, they are transplanted to separate pots. To produce bushy plants the center stem should be pinched out.

An occasional 40° below zero does not make outdoor growing of Hyacinths an impossibility, provided the ground is dry, and the bed is covered with 12 inches of loose leaves or straw. The bulbs may also be planted in pots now, kept in a cool cellar during winter, and in spring be planted out, without disturbing the ball.

Various Floral Queries.—*T. C. P., La Prairie, Canada.*—A Lemon Verbena that has been growing all summer needs rest in winter like any other deciduous shrub. The best place to winter it is a frost-proof cellar.

The hardier Magnolias should survive your winters without protection, we should think. Small trees may be easily protected by tying evergreen branches around them.

There are a great many species and varieties of Jasmines; among the most desirable are: *J. grandiflorum, gracile, undulatum, Azoricum, officinale, multiflorum, odoratissimum, nudeflorum*, etc.

Cestrum nocturnum is an old plant that any leading florist should be able to procure.

Trade Notes.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADE ARE SOLICITED.

E. A. Reeves, 60 Cortlandt St., New York, has sold out to J. M. Wells.

John Lewis Childs, Floral, N. Y., has increased his facilities by 5,000 feet of glass.

The Cucumber and Melon seed crops seem to be large, except in the light seedling sorts.

Chas. L. Mitchell has erected large Rose forcing houses at Oakley near Cincinnati, having a capacity of 7,500 plants.

F. R. Pierson, Tarrytown, N. Y., has had so large a trade in Easter Lily plants this fall that his stock is exhausted.

B. K. Bliss is looking better than we ever saw him before; the result of a long rest in Europe and at East Bridgewater, Mass.

P. M. Augur & Son report a great demand for the Jewell Strawberry plants for spring delivery, and they expect to sell 100,000 of them.

A. J. Caywood & Sons, Marlboro, N. Y., have had a good trade this year. Their new varieties of Grapes and the Raspberry take well.

Jos. Breck & Sons, Boston, this fall imported three times as many Holland bulbs as last year, and now report their supply fast being exhausted.

The Matthews plows are taking well with Eastern market gardeners. But it is doubtful if they ever have so great a popularity as the Matthews seed drill.

R. & J. Farquhar & Co., Boston, are having excellent success in selling the new Monarch Rhubarb, which is propagated by the paternal hands in Scotland.

Some skilled florists think that the Bennett Rose is one of the finest yet for forcing, ranking with the first in the list. Mr. Evans struck a good thing in importing it.

Young & Elliott's pulverized sheep manure is pronounced by H. P. Hubbard of New Haven as being the best thing he has tried for making Roses bloom freely, and for making potting soil.

Peter Henderson says he saw but few novelties in Europe, during his recent trip, that were especially remarkable. But he saw many interesting things which he promises to tell our readers about soon.

The Niagara White Grape is still held at $2.00 per vine by the N. W. G. Co., and those most interested in its dissemination; but some outside parties are advertising it freely as low as seventy-five cents a vine.

Autumn opened auspiciously in the fruit and vegetable markets, after the usual languor of summer. Preserving season brought a rush of customers and the "return of the native" has made an unusual stir in all departments. The flower trade is still dull, because entertainments have not yet started. The demand is almost entirely for Roses and Chrysanthemums. Few of the latter are brought in and those are bushes in bloom, about 24 inches high and well covered with blossoms, while Chrysanthemums so far are scarce.

STRICTLY RELIABLE ROOFING.

All our readers who are troubled with a leaky roof or have a new roof to lay on dwelling, barn, shed or other building should write *at once* to Indiana Paint & Roofing Co. (New York or Indianapolis, Ind.,) for their illustrated catalogue, and samples. Mention AMERICAN GARDEN.

GOOD WATER.

The Waukesha Glenn water advertised in this issue is one of the very finest of all table waters, and is fast becoming known as a specific for many diseases of the stomach and bowels. It seems like "carrying coals to Newcastle" to bring spring water from the West to the East, but the Waukesha Glenn is gaining many converts to its virtues in all sections.—*Adv.*

THE FLORAL WORLD.

This superb, illustrated magazine is now recognized as the *best* Floral Monthly published in America. It specializes the curiosities and beauties of the Vegetable Kingdom. Correspondence from all parts of the world. Specimen copy and packet Finest Mixed Pansy seed mailed on receipt of three 2-cent stamps. Address Floral World, Highland Park, Chicago, Ill. THE AMERICAN GARDEN and the Floral World one year for $1.25.—*Adv.*

WE HAVE just received the Premium List of THE PHILADELPHIA WEEKLY PRESS, and it is certainly the finest piece of work it has ever been our good fortune to see. How THE PRESS can offer such inducements is a mystery. We advise all our readers to send for a copy and examine it. Among their premiums they offer the World's Cyclopedia and THE WEEKLY PRESS one year for $1.75.—*Adv.*

TILLINGHAST'S PUGET SOUND CABBAGE SEEDS are being planted by many of the largest truckers in the South in preference to all others. Mr. F. M. Duncan, Proprietor of the Cotton Planter's Seed Store, Dallas, Ga., after using and selling them writes: "The P. S. Cabbages are all that can be desired. They germinate well and the plants are vigorous and healthy. The heads are very large, solid and sound. Every one who has tested them speaks in the highest terms of them. They are sure to supplant all others." For particulars and prices of this famous seed, address Isaac F. Tillinghast, La Plume, Pa.—*Adv.*

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These will be continued (most of them illustrated) until the chief events of the Civil War have been described by leading participants on both sides. General Grant's papers, to appear soon, include descriptions of the battles of Chattanooga and the Wilderness. General McClellan will write of Antietam, General D. C. Buell of Shiloh, Generals Pope, Longstreet and others of the Second Bull Run, etc., etc. Naval combats, including the fight between the *Kearsarge* and the *Alabama*, by officers of both ships, will be described.

The "Recollections of a Private" and special papers of an anecdotal or humorous character will be features of the year.

SERIAL STORIES BY W. D. HOWELLS, MARY HALLOCK FOOTE AND GEORGE W. CABLE.

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(Continued from page 275.)

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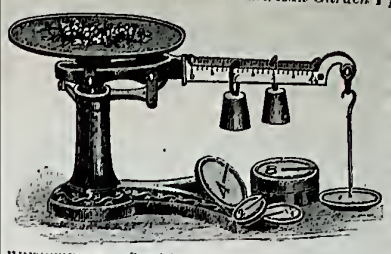

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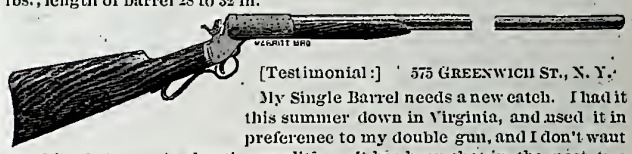

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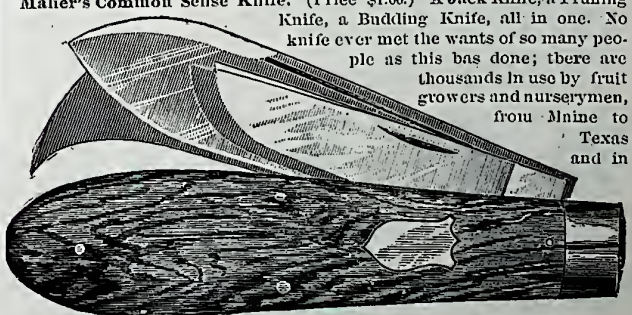

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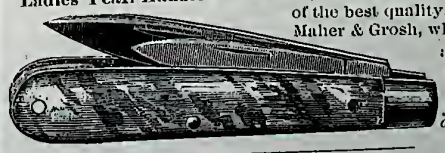

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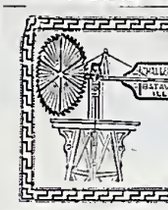

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Prospectus continued on next page.

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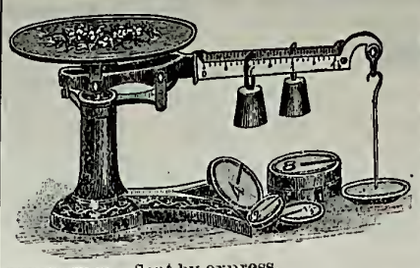

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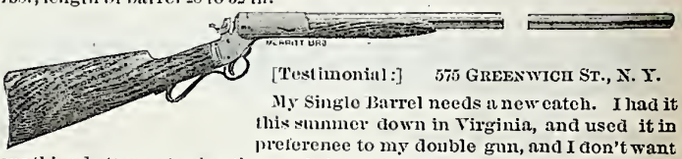

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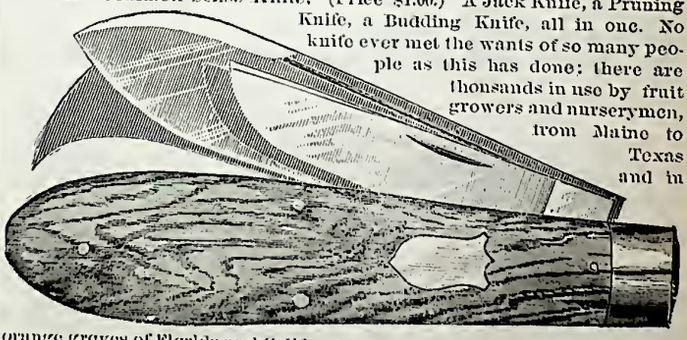

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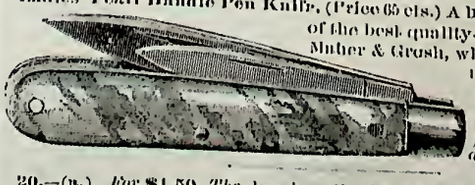

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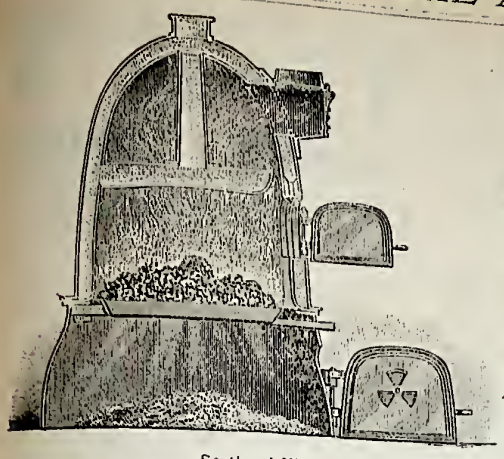

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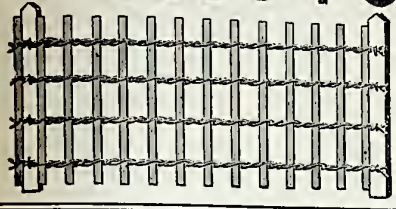

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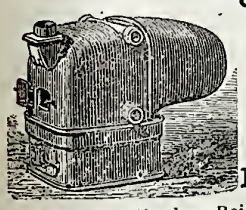

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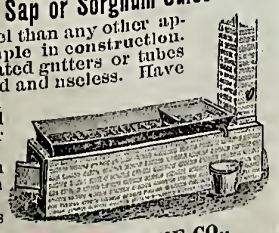

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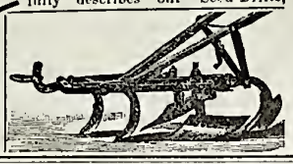

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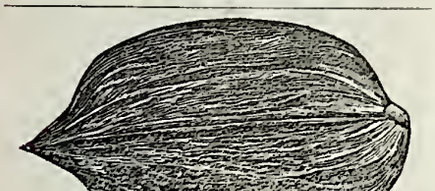

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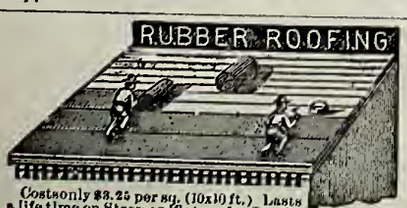

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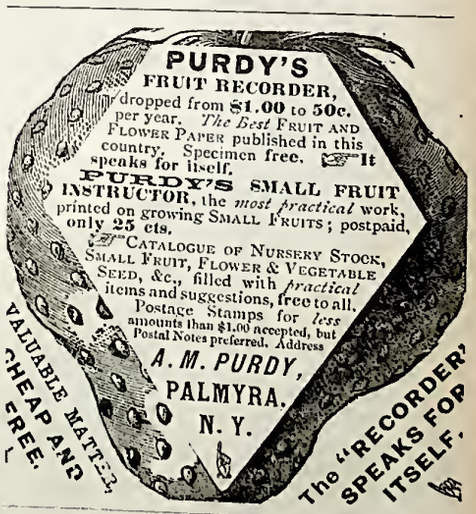

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A Monthly Journal of Practical Gardening.

Dr. F. M. HEXAMER, Editor.

Vol. VI. (Old Series, Vol. XIII.) DECEMBER, 1885. No. 12.

DECEMBER PLEASURES.

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IN TIME TO COME.

The flowers are dead that made a summer splendor
By wayside nooks and on the sunny hill,
And with regrets these hearts of ours grow tender,
As sometimes all hearts will.

We loved the blossoms, for they helped to brighten
The lives so dark with wearying toil and care,
As hopes and dreams forever help to lighten
The heavy loads we bear.

How like the flowers, whose transient life is ended,
The hopes and dreams are, that for one brief hour
Make the glad heart a garden bright and splendid
Above Love's latticed bower.

One little hour of almost perfect pleasure,
A foretaste of the happiness to come;
Then sudden frosts—the garden yields its treasure,
And stands in sorrow, dumb.

Oh, listen, heart! The flower may lose its glory
Beneath the touch of frost, but does not die.
In spring it will repeat the old, sweet story
Of God's dear by-and-by.

In Heaven, if never here, the hopes we cherish—
The flowers of human lives we count as lost—
Will live again. Such beauty cannot perish;
And Heaven has no frost.

TOMATO GROWING IN ENGLAND.

When in England last summer no industry in horticulture surprised me so much as the growing of Tomatoes in greenhouses. One establishment at Swanley, Kent, covered an area of something over five acres. In running feet the greenhouses were two-and-a-half miles in length by 18 feet in width. Such an establishment must have cost, even in England, not less than $100,000. All this space when I saw it last August was planted with Tomatoes, which were then selling at six pence sterling per lb., or about $6.00 per bushel. At much less they would not pay to raise under glass.

The wonder is that in these days of refrigerators on our ocean steamers, some enterprising firm on this side of the Atlantic does not go into the business of supplying England with Tomatoes. They can be grown here, and even selected for exportation at $1.00 per bushel. The transit and use of refrigerators would not be much more, I should judge, and the quality of our fruit grown in our tropical summer is much better than that grown under glass in the cloudy atmosphere of Britain.

The proprietor of this vast establishment alluded to at Swanley, is Mr. Ladd, a man hardly yet beyond middle age. He operates three separate greenhouse establishments in different parts of the suburbs of London, aggregating in extent nearly 20 acres of glass. One division is devoted to hothouse Grapes, another to Tomatoes, and another to Roses and other bedding plants; and when it is known that all these vast establishments are owned and controlled by Mr. Ladd, who less than twenty-five years ago was so poor that he had to carry his plants in a basket on his head to Covent Garden Market, it will give some idea of the enterprise and ability that one man in a short lifetime has thrown into horticulture. In extent his establishment far surpasses all his contemporaries; and some of the older ones are the accumulations of two or three generations.

I noticed that in the hundreds of conservatories attached to private dwellings, Tomatoes during the summer months were trained up on the rafters under the glass, showing the great increase evident in the consumption of this vegetable. Over a dozen years ago I do not remember of finding them cultivated for market anywhere in England, nor of even seeing them grown for private use in greenhouses. If they can be cheapened by export undoubtedly the consumption of them would be much larger, and somebody may yet make a fortune in exporting Tomatoes. PETER HENDERSON.

MIGRATION OF FRUITS.

As fruit growing is more and more becoming one of the great industries of our country, the history of the migratory course taken by the various kinds of fruits furnishes a most interesting study.

There was a time when New York's Strawberry supply was obtained almost exclusively from Bergen Co., N. J. Many readers will remember how abundant and cheap these berries were, yet, as a market crop, Strawberries are now hardly to be found anywhere in the county; they have migrated to Monmouth and Burlington counties of the same State, where hundreds of acres are under cultivation; then they moved on to Delaware, Maryland and Virginia, while others took a northerly course toward Connecticut and Western New York.

In the Blackberry we find the same roving habits. Formerly all the Blackberries that came to our city were wild ones, gathered on the uncultivated lands of Long Island and New Jersey, but when the demand increased more than the supply, some enterprising fruit growers undertook to civilize them, and make them yield to the influences of the plow and hoe; and remarkably well they did succeed. The Kittatinny, the Wilson, and other varieties were christened and sent out to gladden the hearts and palates of all lovers of this delicious fruit. Soon they wandered all over New Jersey, into Delaware, and Ulster Co., N. Y., but they did not remain long except in Monmouth, Burlington and Cumberland counties, N. J., where they found a congenial home and are still cultivated successfully and profitably.

Peaches are not found more stationary. In 1848 to 1850 Burlington Co., N. J., was literally filled with Peach trees loaded with delicious fruit. So abundant were the crops that frequently the Peaches sold for less than the cost of transportation. Now, I doubt whether enough Peaches are grown in the county to supply the home demand. What became of them? Some have become domesticated in adjoining counties where they are giving rich returns, others went to Delaware and Maryland, and others, quite lately, to Ulster Co., N. Y. In these latter localities cultivators have become so much pleased with them, that they make Peaches their leading crop, and yet the probability is that it will not require a life time before they will have deserted their present homes. In fact, in Delaware their decadence has already commenced; hundreds of orchards are perishing for every dozen that are planted.

It is only a few years since our principal supply of Grapes came from Nyack on the Hudson; now this town receives the quantity needed for home use from New York. The cultivation of the Grape has spread over a large area in Northern as well as Southern States. For a time Grapes settled in Virginia, Delaware, the lower counties of New Jersey, but notwithstanding the great care taken with them they did not become firmly enough established. The choicer varieties at least did not seem inclined to associate with the Concord, and sought and found congenial homes around the beautiful and romantic lakes of Central New York. Here the Delaware, Diana and Catawba flourish as they do nowhere else. The Concord has settled along the banks of the Hudson, chiefly in Ulster Co., where both soil and climate are remarkably favorable, and cultivators understand their special management to perfection. Anyone who desires to see Concords in greatest excellence should visit Marlboro' and the Highlands of the Hudson.

Early geographies have told us that New Jersey is noted for its fine Apples and sweet cider. Then every farmer that could raise Roman Stems, Belle Flowers and Wine Saps was sure of realizing large profits; and a tree loaded with the delicious Sheep's Nose was considered one of the greatest luxuries of the farm. Some may also remember with delight the days when they rolled the barrels of sweet cider into the cellar, in anticipation of the winter evening's enjoyments around the open fire-place, cracking nuts as well as jokes, and passing round the cider jug. But, alas, in modern geographies no mention is made of these facts; because in New Jersey the glory of the Apple has departed! C. W. IDELL.

Water-Lilies will hereafter form a conspicuous feature in the Central Park of New York, the Park Board having voted $1000 to be used for the purchase and planting of the choicest kinds.

Field flowers, Fuchsias, the blossoms of meadow plants, with fantastic grasses from Jersey marshes, have been used effectively the past summer in decorations, both for out-of-doors, and home decorations. Iris has been very popular, as have been Hibiscus and Abutilon.

A double Gladiolus flower is reported by one of our readers. Some years ago we observed such a freak of nature in our own garden, but did not consider it an improvement over the single form. The corm that produced it was planted the following year, but all its flowers were single.

For a garden party given on Staten Island, arches were made in the grounds, of wild grasses, over which were draped the yellow Lilies of the swamp which swung their amber bells about in a very æsthetic way. Large and carelessly tied sheaves of Reeds and Cat-tails were placed in bronze vases, and bound artistically on the statuary in the grounds. In the house there were large, oval baskets and ornamental camp kettles filled with native Ferns, wild Roses, and *Lobelia cardinalis*.

Most of the plants grown ordinarily in windows, such as Geraniums, Carnations, Stevias, Abutilons, Fuchsias, etc., like plenty of direct sun, but not a high temperature.

DELLWOOD.

THE RESIDENCE OF MR. T. J. SLAUGHTER.

Dellwood lies on a high tract 450 feet above the level of the sea. The estate embraces 70 acres with all the beauties belonging to hilly localities,—the knolls, slopes, and dells that give such charming expression and provide the landscape gardener with facilities for working out elegant effects. A wide spread of lawn covering 20 acres, and a dense forest of Oak, Chestnut and Norway Pine in the distance, are striking features as Dellwood is approached. Such a stretch of turf, so neatly shaven that it appears like moss, with its shadows of the specimen evergreens that are planted in clumps at intervals, satisfies the eye with its lovely serenity, from April to November.

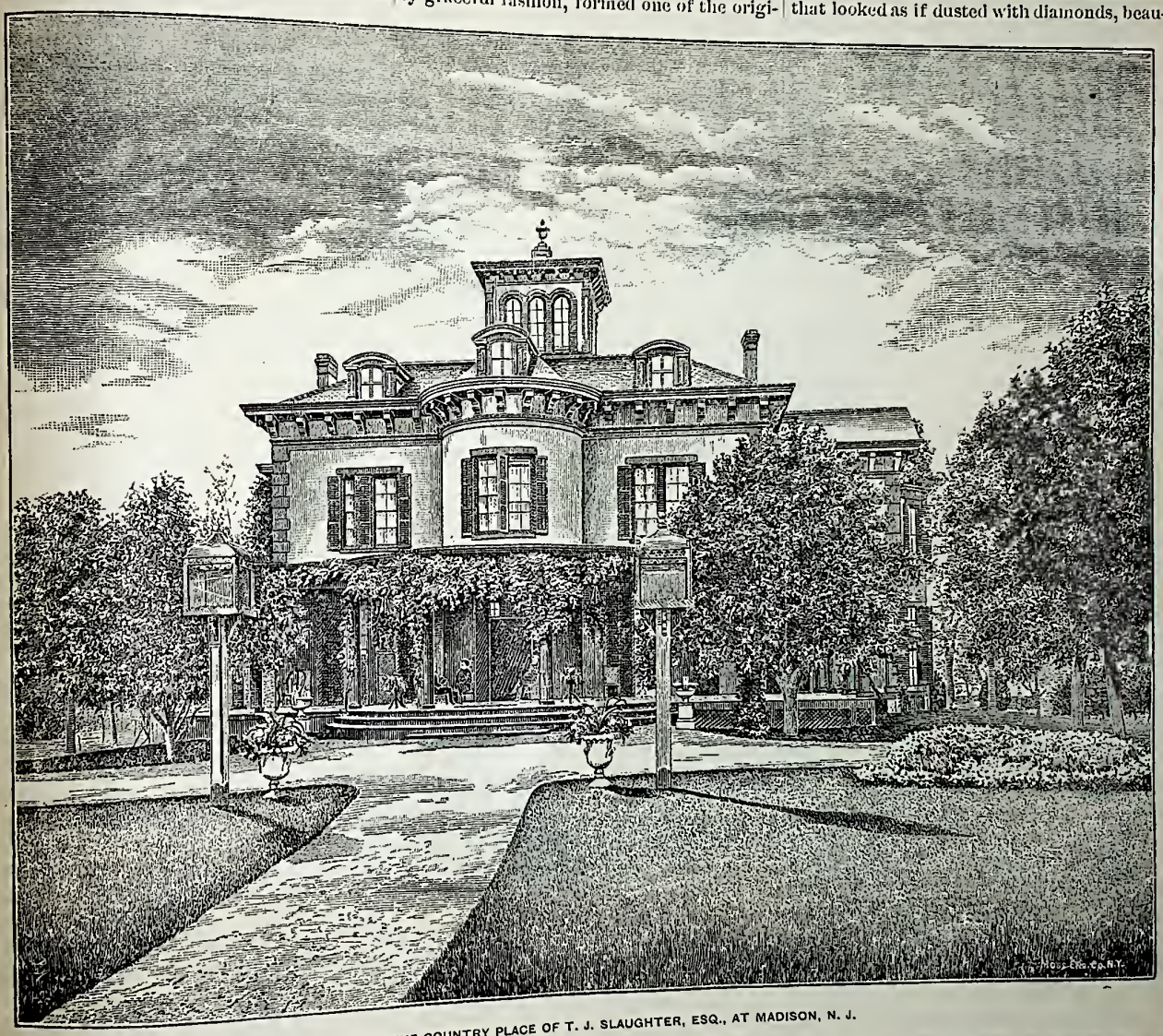
The aim in embellishing the front grounds has been to give them an elegant simplicity. During the summer six specimen plants of *Allamanda Schottii* of great size were placed along the drive toward the homestead. These plants were laden with a mass of golden blossoms, and the rich, funnel-shaped flowers never showed their yellow throats to better advantage than here, contrasting vividly with the lawn and its dark dots of trees.

A most graceful Palm, *Seaforthia elegans*, with its dark-green, smooth leaves, five feet in length, bending fantastically, occupied a prominent position near the veranda. At each side of the entrance to the porch are very remarkable specimens of Magnolias. These trees are of perfect symmetry, and in May when they are covered with a shock of blossoms, they present a grand appearance and their fragrance spreads a wide distance.

The borders in front of the house have been through the summer ornamented with oval beds of bright foliage. At one side there was a parterre of the best varieties of Japanese Lilies; Tigridias and Gladioluses were massed together, and seemed to vie with each other for supremacy. The many tall blossoms of rich hues, and the numerous Lily-heads half bowed in their own peculiarly graceful fashion, formed one of the original designs of path decoration at Dellwood. A path leading down the front lawn to a picturesque lake is lined with handsome shrubs on either side that make an agreeable break. This path meets at the water edge a summer-house, wreathed with Honeysuckle and Roses in their season; the lake is fringed with Willows, which droop their branches into the cool spring water, when these are dressed with green.

The avenues inside of the grounds are 20 feet wide and are flanked by ancient Elms of noble grace. There is a circular drive in the border of the "Dells," (which are five in number,) that is admired by the numerous visitors to these pleasure grounds. The view of the *Hydrangea* beds from either side of this winding road is delightful. All of the finest varieties are set out for summer ornamentation.

At the head of the entrance to the "Dells," a large bed of gorgeous flowers has been cultivated carefully, and has spangled the turf with its kaleidoscopic colors. Althea shrubs make a stalwart background, and Geraniums of great size have given out a blaze of bloom. Sunflowers, Marigolds, *Calendula meteor* and Salvia provided a radiance that was magnificently conspicuous until frost broke down their glory. Masses of Begonias have also, with their pendulous blossoms, that looked as if dusted with diamonds, beautified this position, in the perfection of art.



THE COUNTRY PLACE OF T. J. SLAUGHTER, ESQ., AT MADISON, N. J.

The curious formation of land in the "Dells" lends interest and charm to this part of the estate. The "dells" are like deep bowls sunk below the surface. Four of these are kept mown as carefully as the level lawns. In one a tropical effect in growth is cultivated at the suitable season; in another are dwarf evergreens, and in still another are clusters of forest trees. A Fern dell is by far the most fascinating. It is one tangle of wood Ferns, containing almost every kind hardy in the climate. A fine effect was made in one dell where the grass was like plush, by a central bed of *Hydrangea Hoggii*, that blossomed profusely.

Fruits.

SEASONABLE HINTS.

Usually a good deal of work may be done this month that will forward and facilitate spring operations. Plowing the ground where new plantations are to be made, digging holes for trees to be planted, constructing trellises, procuring posts and stakes, and many other things may be done now to material advantage.

All plants that require winter protection should be covered without delay.

Strawberries in the Northern States are always benefited by winter mulching, and on heavy, retentive soils it becomes an absolute necessity if we would insure best results. For ordinary-sized beds in the home garden, an excellent way of winter covering is to spread coarse manure between the rows, then cover the entire bed, plants and all, with dry leaves, about two inches thick, and lay evergreen branches or brush over them sufficient to keep the leaves in their place.

In the field coarse straw is generally more convenient of application, with here and there a shovelful of soil thrown upon it to hold it down. Where salt hay can be obtained, nothing is better for the purpose; it is free from obnoxious seeds, and may be used for many years.

Raspberries.—Now is an opportune season for scattering coarse manure along both sides of the rows. It is astonishing what effect such a top-dressing has on the following year's crop.

Grapevines of tender varieties should be loosened from their trellises, bent over, laid upon the ground and be covered with soil, principally their tip ends, the chief object being to prevent evaporation from the terminal twigs. The vines may be pruned before laying them down, thus lessening the work of covering. Even simply laying the vines upon the ground makes them less liable to suffer than when left on the trellises.

Mice are often doing considerable damage to young fruit trees during winter, especially when there is much snow upon the ground and these mischievous rodents cannot find much food. They will then work under the snow towards the trees, and gnaw their bark off. Tramping the snow down after every snow-fall, several feet around the stem of the trees, is an almost complete protection; but as this is apt to be neglected sometimes, a surer preventive is to hill or bank soil around the trees. These mounds should be not less than 18 inches high, as steep as possible, and be packed firmly and smoothly. Of course this has to be done before the ground freezes very deep.

Coal Ashes.—Don't cart coal-ashes in the road if your land is heavy, but sift and scatter them over the ground. Spread thickly around Currant and Gooseberry bushes; ashes are one of the best non-conductors of heat, and keep the soil around the plants cool and moist in summer. In many a garden a load of sifted coal-ashes will do more good than a load of stable manure.

Labels will get lost even in the best regulated gardens, therefore no prudent gardener should consider his year's work finished before he has drawn a map of his grounds on which the position and name of every tree is marked.

THE GREGG RASPBERRY IN VERMONT.

If called upon to select one variety of each class of fruits or vegetables and we were restricted to the cultivation of that particular kind, the choice would in many cases be a very difficult and puzzling matter, but were I placed in this improbable predicament, when it came to Black-cap Raspberries, I am sure that I should without hesitation speak for the Gregg. Although a trifle late in ripening, the general sterling qualities of the fruit will amply repay one for waiting a little. In my test of this variety it was planted in a strong, sandy loam, near to, and was given the same care as, the Souhegan, Tyler, and Mammoth Cluster. The Gregg has outstripped all the others in vigor of growth, and as to productiveness was far ahead. The size of the berry averages larger than any other cap variety of my acquaintance, and the quality is excellent.

My experience with plant novelties leads me usually to modify somewhat the statements of originators and disseminators regarding their new varieties when taken as a base for expectations, but I confess that the claims for this variety have been fully substantiated thus far in my experience with it.

The Souhegan was a disappointment both in earliness and other qualities. My plants obtained from two reliable sources gave no better results than the Tyler which they closely resemble. The old Mammoth Cluster has many friends yet, and not without good reason, for when given a fair chance on strong, moist soil, it will compare favorably with many of the new arrivals.

Vermont. W. H. Rand.

BEES ARE POMOLOGISTS.

Not a few believe that bees injure fruit. They are frequently accused of injuring Peaches, Apples, berries, and even Grapes. I do not believe this. But though it be correct the bees are the best friends of the horticulturist. Did you ever think why? Sex is not confined to the animal kingdom by any means; plants are sexual. The sexual organs are in the blossoms. For the blossoms to produce fruit the ovules must be fertilized by the pollen from the anthers at the summit of the stamens, which falls upon the stigma and traversing the style of the pistil reaches the ovary.

In this process of fertilizing, insects are important aids and in quite a large number of cases are essential aids; and of all insects bees are the most important workers. They seek the honey to be found in the blossoms; and while on this quest they disturb the anthers, knocking the pollen upon their wings and bodies and in this way conveying it to waiting stigmas. In a large class of flowers the work of insects is essential to fertilization either because the stamens and pistils of the blossom do not reach maturity at the same time, or the pistils are turned away from the stamens, preventing the pollen from falling on the stigmas, or else the anthers are below the stigms, having the same effect; while other blossoms have no pistils or else no stamens: in all these cases self-fertilization is impossible.

To fertilize such blossoms it would seem that the creation of the bees had been especially designed, so well do they perform their work. First, the bees are formed just right to accomplish it. Then the flower has the honey to attract the bee. And when the conditions are most favorable the flower sends out a fragrance to yet further attract the bee. Prof. Gray calls this fragrance the flower's advertisement. But it may occur to the mind of the reader that the bee would visit flowers of different species and thus occasion the greatest confusion. Not so. The bee has a keen sense of taste and never mixes its nectars, but as the nectar of all blossoms of each species tastes alike it confines each visit to one species. Aside from this, having found nectar in one blossom it would naturally seek in others having the same appearance and fragrance. To get at the honey the bee must twist itself into all possible shapes and positions, a wise provision of nature to secure the dislodgement of the pollen; and she also doles out the nectar in small quantities that the bee may be compelled to make frequent visits. It is also a fact worthy of note that the blossom does not yield nectar until it is ready for its part in fertilization.

This phase of the phenomena is curious enough to be interesting, but there is an intensely practical aspect of the case. Nature would not go to so much trouble for nothing, and if there was not an important work for the bees to perform, there would not be these provisions made for it. We are forced to the conclusion that where there are no bees many blossoms will fail of being properly fertilized and hence fail to mature fruit.

How much the fruit grower would lose by the total destruction of bees it would be hard to estimate even approximately, but probably it would far exceed any damage the bees will do by occasionally puncturing a Grape or Peach. It is said that in a town in Massachusetts, so strong was the belief that bees injured the fruit, that an ordinance was passed obliging the bee-keepers to remove their bees to another locality. After a year or two the fruit growers decided to have the bees brought back as so little fruit set upon the trees in proportion to the blossoms which appeared. When we consider the work done by bees, we are justified in calling them pomologists.

I am certain that bees injure fruit very little, if at all. Most of the destruction blamed upon them is the work of other agents. The jaws of the bee are too weak to puncture the skin of the most delicate Grape. Only after it is pierced does the bee harm the fruit. John M. Stahl.

PARTIALITY OF ROSE-BUGS.

In the "Munson Hill Nurseries," in my vicinity, are growing a number of Japan Persimmon seedlings, some of which fruited this year. On one tree, which bloomed profusely, the blossoms were small save on one branch which had large ones. The rose-bugs attacked the small blossoms, and although frequently picked off by hand, a hundred and more at a time, the blossoms were destroyed, while the large ones on the same tree were not disturbed by them and perfected fruit.

My attention was not called to it in time to note whether the small blossoms were strictly staminate or not, but I will carefully examine them next season and report.

Virginia. C. A. Uber.

SOME GOOD TABLE APPLES.

A succession of handsome, showy Apples of first quality is a want often felt, not only by city caterers but by country residents when wishing to replenish the fruit dish. I have often noticed the lack of beauty in the Apples placed upon the tables of first-class hotels, what might be an ornament and attraction to the tables being a positive disfigurement. Varieties both beautiful and good are not wanting, and whoever will grow them and bring them to market in as good condition as California fruit is received will be apt to find ready customers in every large town and city.

To one wishing to grow a succession of table Apples combining beauty with good quality, the following list will prove satisfactory where but half a dozen trees can be grown: Early Harvest, Chenango Strawberry, Maiden's Blush, Belmont, Canada Red, Golden Russet. All in the front rank.

Early Harvest ripens in August, is of a beautiful lemon yellow color, and is the only really good table Apple of its season.

Chenango Strawberry when well grown is, I think, the most desirable of all Apples. It is of good size, sheep-nosed or truncated conical in shape, color bright red overlaid with dark red, and as good as it is handsome. It has a meaty texture and aromatic, pleasant flavor that no other Apple possesses. The tree is a healthy, rapid grower of medium size. Its season in Northern Ohio is September 1st.

Maiden's Blush with its pale yellow dress and bright red cheek follows close upon the heels of the Chenango and lasts until the first Belmonts tempt the Apple lovers' taste.

Belmont, also known as Gate, Mamma Bean, and Waxen, is a most beautiful Apple, large, smooth, waxen yellow, often faintly blushed orange and spotted red; flesh yellow, tender, with a rich sub-acid, fine flavor; a profuse bearer. Its season is from October to January, when it is succeeded by the not uncommon

Red Canada, otherwise known as the Richfield Nonsuch. This is a good-sized, dark red Apple, of fine appearance and very excellent flavor. It does not wither, and holds its flavor until the very last Apple has succumbed to the inevitable, about March 4th. After this there is no Apple that, all things considered, is so good as the

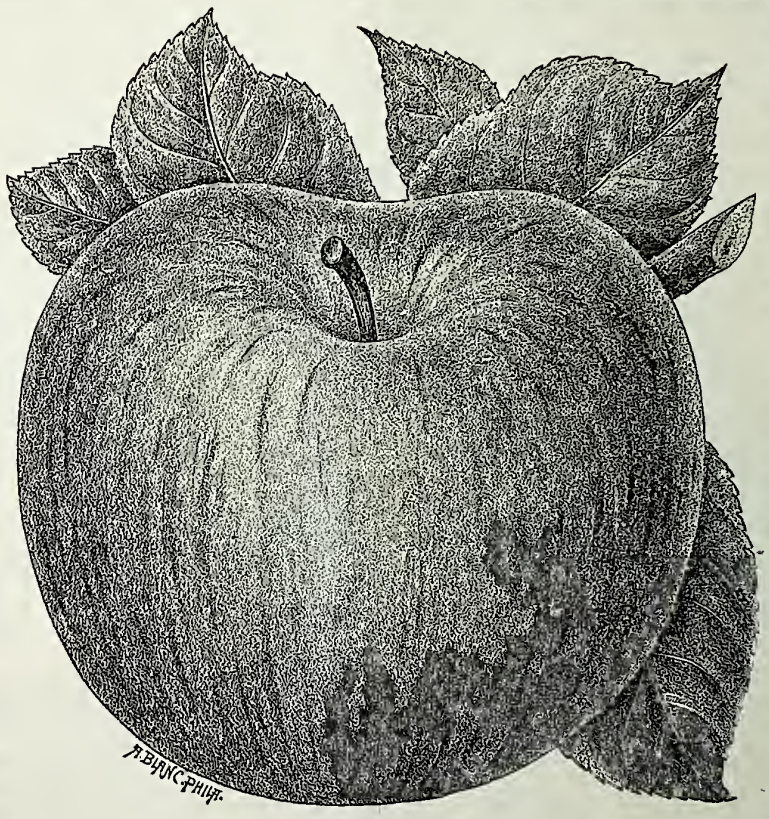
Golden Russet. As ordinarily kept, subject to both heat and light, it withers and loses flavor, but when stored close, dark and moist at a low temperature it is of better quality for the table, taking texture into account, than the Newtown Pippin or Roxbury Russet, the only two Apples of the older varieties that rival it in keeping qualities.

If additional varieties are wanted to overlap or reinforce those mentioned I would choose, *Tetofsky* (neither handsome nor extra good but very early, and better than Ananno), *Porter*, *Ohio Nonpareil*, *Fameuse*, (Snow) *Jonathan* and *Peck's Pleasant*.

Of newer Apples both handsome and good may be mentioned *Oldenburg* and *Wealthy*; the latter a brilliant, light red, medium to large-sized Apple with a pleasant, sub-acid flavor, originated in Minnesota, and, on account of its "iron-clad" hardiness, is of inestimable value for extreme Northern and Northwestern States.

Astrachan, *Alexander*, *Western Beauty*, *St. Lawrence* and *Rome Beauty* are all very showy and beautiful, but deficient in flavor.

Ohio. L. B. PIERCE.



THE WEALTHY APPLE.

OLD AND NEW GRAPES.

At a recent meeting of the American Institute Farmers' Club Mr. E. Williams of Montclair, N. J., one of the most public-spirited members of the Club, exhibited an excellent and highly interesting collection of Grapes. The following comments upon the different varieties, as derived from his personal experience with them, are of great interest and value to Grape growers, and were kindly furnished by Mr. Williams for publication in THE AMERICAN GARDEN.

Cottage.—A Seedling of Concord, as healthy, hardy, vigorous and productive as its parent. Clusters not quite as large, berry fully so, earlier and better, very sweet and delicious. When fully ripe, drops rather freely.

Moore's Early.—Another Concord seedling of the same general characteristics; very large and about ten days earlier; cluster more compact, and seems to improve in size as the vines grow older.

Worden.—Still another seedling of Concord, earlier, larger, and much superior in quality, while it is fully as hardy, vigorous, healthy and productive. It is usually a week earlier than Concord; this season there was little difference. It has been repeatedly asserted that it was so nearly like the Concord that it made little difference which was planted, and doubtless thousands of Concords had been sent out and planted under this name. He had insisted for years past there was a decided difference and people were finding it out.

Concord.—Too well known to need comment for our readers.

Early Victor.—An early Grape, raised and sent out by John Burr of Kansas, the originator of Burr's New Pine Strawberry of years ago. This Grape is about as early as any of the preceding. The vines received were poor, but having become established seem thus far to be hardy, healthy, vigorous and very productive. The cluster and berries are rather under size to meet the popular demand; a very good early Grape for his section.

Cambridge.—Another seedling of Concord and much like it in every respect.

Black Hawk.—Another of the family, hardy and vigorous. Cluster and berry a little smaller than Cottage and ripens about the same time; quality nearly up to the average of this family.

Martha.—A white Concord seedling, vines a little less vigorous than its parent, berry and cluster medium, productive and liable to rot and mildew, berry sweet but lacking in character. When it was introduced the advertisement said everybody wanted Martha, but on trial it is found that everybody doesn't want her, they prefer a lady of more decided character. It is prone to decay soon after reaching maturity.

Telegraph.—An early Grape of good quality; cluster medium size, close and compact; vine hardy, healthy and productive, as nearly iron-clad as any he has. A Grape that has been very much overlooked.

Ives' Seedling.—Another iron-clad vine, cluster large and abundant, colors early, and when ripe in appearance is sour and austere. In this condition it is sent to market in large quantities under the delusive idea that earliness and good looks will secure the highest prices, but one purchase satisfies the customer, and the demand and price go down together. If growers would learn and practice a little honesty and common sense in this respect, they would find it more profitable to themselves and their neighbors. It is a great deal easier to lower prices than to raise them, and it is suicidal policy to send unripe fruit of any kind to market under the delusive idea that the purchasing public doesn't know the difference. It does not take them long to learn the difference, and to let

it alone. This Grape should hang two or three weeks after appearing to be ripe to attain its highest degree of excellence. It is then a very good Grape.

Isabella.—An old favorite, that has of late years become so fickle that she cannot be depended on to ripen, and if perchance she reaches the condition, does not seem to acquire that degree of perfection in quality for which she was noted thirty to forty years ago. Why? is a conundrum he confesses his inability to solve.

Catawba.—Another old friend and for many years the favorite consort of the Isabella, has followed in her footsteps and become so capricious as to be very uncertain. He still retains a vine or two for "Auld Lang Syne."

Clinton.—This variety was widely disseminated when the Isabella and Catawba began to fail, but as a table Grape it failed to meet with general favor, but for some purposes it is still retained and has been quite extensively planted.

Bacchus.—A Grape of like character as the Clinton and so nearly like it in all characteristics of fruit and vine as hardly to be distinguishable save by an expert. It is said, however, to possess better wine properties. Both are vigorous, hardy and productive.

Canada.—This is one of Arnold's hybrids, said to be a cross of Clinton with Black St. Peter. Vine a moderate grower, berry larger than Clinton, cluster resembling it somewhat but not shouldered; decidedly the best Grape of this family he has yet tested. It has a sprightly, vinous flavor and ought to make a better wine than the Clinton.

Black Eagle.—A hybrid Grape raised by Dr. Underhill, a fine Grape in perfection, but the vine is not very vigorous and the fruit is liable to set imperfectly and rot badly.

Black Defiance is another of Dr. Underhill's hybrids, a late Grape of fine quality and splendid appearance. It ought to be a splendid Grape farther South where the seasons are longer; cluster very long, berry large, quality very good.

Lady Washington.—One of the most showy of all our white Grapes; vine vigorous and healthy, berry medium, cluster very large, quality variable, sometimes very good, at others very inferior. In appearance, well-grown clusters are without a peer.

Pocklington.—This Concord seedling of which such extravagant claims were made has not thus far come up to the standard claimed for it. The clusters are small to medium and the foliage has mildewed and the fruit rotted every year. When fully ripe, very handsome golden yellow and drops freely. Older vines and higher culture may improve its cluster if nothing more. The native aroma in the first is very abundant.

Delaware.—A fine, delicate Grape, by some considered the finest of all our native varieties, among Grapes what the Seckel is among Pears. Vine a very moderate grower generally, and when first introduced many vines were propagated from green wood to such an extent as to ruin its constitution; of late years it seems to be recovering in this respect, so that vines planted in congenial soil and liberally treated, give good results when well established.

Vergennes.—A red Grape that was claimed to be the Grape "*par excellence*" we had been looking for, as it was going to keep better than any other, but somehow his vines had mildewed so badly for three years past he had not been able to ripen a decent crop of fruit; berry large, cluster medium.

Elvira.—A white Grape from Missouri said to be valuable for wine. Vine a vigorous grower and enormously productive, five and six clusters on a cane being common. Cluster short, often shouldered; very compact, so much so as often to crowd the berries off the peduncles. It often cracks badly on approaching maturity, especially in rainy weather; of no value as a table Grape.

Noah.—An Illinois seedling of Sayler, the same as Elvira but a great improvement over that variety in size and beauty of cluster; vine a strong, vigorous grower but very liable to mildew, and on reaching maturity the fruit drops as badly as any kind he knows of. It is a pity so handsome a Grape should be of so poor quality for table use. As a wine Grape it may be all that is claimed for it.

Goethe, Rogers' No. 1.—A Grape of excellent quality, berry large, bunch medium; it is often called a white Grape but when fully matured becomes of a delicate pink. Like all of these hybrids the foliage and fruit are liable to mildew, but its delicious quality will justify the risk and extra care in this direction to secure it.

Salem.—One of the most popular of Rogers' red varieties, cluster medium, berries large, quality excellent, vine vigorous and productive, sometimes rots badly.

Wilder, Rogers' No. 4.—One of the best and most popular and reliable of his black varieties; berries and clusters large, quality excellent.

Merrimack, Rogers' No. 19.—Black, quality good, cluster medium, often fails to set well.

Barry, Rogers' No. 43.—Black, berry large, cluster medium to large, vine vigorous and productive, quality very good and keeps well.

Herbert, Rogers' No. 44.—Clusters medium to large, seldom shouldered, berry very large, black, excellent vine, vigorous and productive. This with Barry and Wilder are the best of Rogers' black varieties he has tested.

Massasoit, Rogers' No. 3.—An excellent and beautiful red Grape, early, berry and cluster large, vine vigorous and productive. The chief fault is its tendency to set its fruit imperfectly, otherwise it would be one of the best early varieties.

Agawam, Rogers' No. 15.—A very popular red Grape, early, of large size, thick skin with a peculiar musky, aromatic flavor, cluster large but often imperfect. This is by some considered the best of all of these hybrids.

Jefferson.—A late red Grape of excellent quality, vine a moderate grower, and with him has seemed a little tender, especially the last severe winter; the buds started feebly in the spring and the clusters were small.

Missouri Riesling.—A wine Grape from Missouri; vine appears to be hardy and healthy so far; fruiting this season for the first time.

Beauty is also a Missouri seedling and seems appropriately named; vine so far vigorous with a remarkable healthy foliage; the fruit promises well as to quality and beauty; this being its first fruit we may reasonably look for improvement in size of both berry and cluster as the vines get more age.

Highland, Rickets.—A large, handsome berry and cluster, but late and needs to hang a long while after coloring to reach perfection. He fears it will prove too late to ripen satisfactorily in this vicinity.

Empire State, Rickets.—A new white Grape of superior quality and very promising. Though not so large in berry and cluster as some, it promises to make up for these deficiencies in quality. The vine is a vigorous grower and quite healthy.

Brighton.—An early red Grape of excellent quality, vine vigorous and productive, berry of good size, clusters large and handsome, one of the very best in all respects.

Niagara.—For vigor, productiveness, size and beauty of berry and cluster this has so far proved the "*Ne plus ultra*" of all white Grapes yet tested. The quality is good, not of the best, but it suits most peoples' tastes so far as his observation goes.

The late Charles Downing pronounced some fruit sent him last fall as better than Concord. High authority! The cupidity and haste to make money on the part of some growers has kept the market supplied with unripe fruit all the season, which has injured the reputation of the fruit, as well as their own, and the persistent assertion of some parties that it is ripe when it is not, tends in the same direction. A little more honesty and self-respect in these regards would be of benefit to all concerned, and to none more than those whose greed for gain prompts them to spoil the market for themselves as well as others.

Pearl and *Grein's Golden* are new white varieties fruiting for the first time, and it would be premature to express an opinion of their merits further than to say that thus far the vines remained healthy.

Out of all the varieties he has thoroughly tested, he could not name three kinds—one of each color—possessing so many good qualities, such as vigor, health, productiveness, size and beauty of berry and cluster, quality, for his section, as the

WORDEN, BRIGHTON AND NIAGARA.

In this he knew many would disagree with him, but with present experience that is his choice, and although frankly admitting that there are many kinds of better quality, taking the average of *all* the merits combined of the three varieties named, they stood higher than any he was acquainted with.

He did not wish to be understood as considering the market properties of the different kinds. The markets were overstocked because the consumption was not equal to the supply. It was the home supply and home consumption he would encourage. Every man or woman who owned a lot outside of a cemetery, should grow enough Grapes for their own family use, and till they did they would not know the luxury of the delicious fruit fresh from the vines, a luxury they never would know if they depended on buying their supply in market.

The great difficulty he has to contend with in Grape growing is mildew and rot. Nearly all varieties are subject to these cursed afflictions. When we learn how to successfully prevent or cope with these troubles Grape growing would lose half its terrors.

THE INFLUENCE OF POLLEN ON THE FRUIT.

BY A. S. FULLER.

Since making my first experiments for the purpose of determining the influence of the pollen on the Strawberry, I have observed many instances of changes in the color, form and flavor of other kinds of fruits as well, which, as it appeared to me, were directly traceable to the influence of pollen, although it must be admitted that with our improved cultivated fruit we must expect an occasional reappearance of ancestral characteristics which may mislead us in attributing certain results to a fictitious cause. Still, when a branch of an Apple tree generally producing fruit with a smooth skin bears russet Apples, and we can find no other cause for the change but the close proximity of a tree bearing Russets, we are inclined to believe that pollen has had something to do in producing the change observed. Because similar or like results are not produced every year only indicates that self-fertilization is the rule with the flowers of such fruits as the Apple, and it is only when the pollen of a particular branch or whole tree is less potent than that on a neighboring one that cross-fertilizing occurs.

I doubt not that every observing practical member of the American Pomological Society can call to mind many such instances of cross-fertilization among our larger cultivated fruits as well as among garden vegetables, especially with Melons and Squashes, for with the latter the influence of the pollen is more readily seen to extend beyond the seed than with such small fruits as the Strawberry.

That our vegetable physiologists have given us very little information on this subject is not at all strange, for very few of them have ever had their attention drawn to it, and furthermore, the extent of the influence of pollen must be studied in the field and garden and not in the laboratory or with dried plants and fruits.

In a few of the more recent works of vegetable physiologists, it is admitted that the influence of the pollen extends to the entire formation of what is commonly called the fruit. Julius Locke in his "Text Book of Botany," edition of 1882, page 495, says: "The increase in size of the ovary, which is frequently enormous (in cucurbita cocus, etc., several thousand times in volume), shows in a striking manner the results of fertilization, especially in the carpels, placentæ and seeds; but very frequently similar changes result also in other parts. Thus, it is the receptacle that constitutes the fleshy swelling which is called the Strawberry, on the surface of which are seated the small true fruits." Also on page 594. "But sometimes the long series of deep-seated changes induced by fertilization extends also to parts which do not belong to the ovary, and even to some which have never belonged to the flower." Among the plants so affected he mentions the Fig, Strawberry and Mulberry.

Then again, p. 900, he says: "The process of development brought about by fertilization or the union of the reproductive cells is usually not confined to the resulting embryo, but shares itself also in a variety of changes in the mother plant itself."

This is what I claim to have seen in conducting my experiments with the Strawberry a quarter of a century ago—*i. e.*, the influence of the pollen extended not only to the seed and fleshy receptacle or fruit, but to the fruit, stalks and the entire plant. Further investigations in the same direction have only confirmed my convictions in regard to the influence of the pollen reaching so far beyond the seed as to affect the fruit sufficient in many instances to change size, form, color and even the flavor.

In ordinarily practical operations it may not be of any great importance, but every fact in regard to such matter is of value in the hands of those who seek to know something of cause and effect in the cultivation of plants in orchard and garden.—*From an address before the American Pomological Society.*

THE GOLDEN QUEEN RASPBERRY.

THE GOLDEN QUEEN RASPBERRY.

Yellow Raspberries have never become very popular in our markets, although one of the highest flavored varieties known. Brinckle's Orange is of yellow or orange color. The principal cause of this is probably that the best of the older varieties of yellow Raspberries were either so tender or so unproductive as to make their cultivation for market unprofitable.

Our illustration represents a variety, now being introduced by J. T. Lovett, Little Silver, N. J., which seems to be free from any objections to which other yellow Raspberries were liable. The Golden Queen—a single plant of it—was discovered by Mr. Ezra Stokes on his farm in southern New Jersey, growing among his twelve acres of Cuthberts. It may therefore be considered a seedling of this variety, which it closely resembles in all characteristic features, except color of the fruit, which is a bright, creamy-yellow. In flavor and size of berry it does not differ in the least from its parent, while, according to Mr. Stokes, it excels it in productiveness and hardiness, having wholly unprotected survived the last unusually severe winter along side of Cuthberts, many of which were severely damaged if not killed. From all that we can learn, the Golden Queen is a very desirable acquisition, and, all points considered, the most valuable yellow Raspberry ever introduced.

PLUMS AND POULTRY.

In former years it was not difficult to raise Plums, they grew naturally in abundance, but of late a good crop is of rare occurrence. Even in the woods, which formerly abounded with wild Plums, insects and disease destroy the fruit and trees. Some varieties are decidedly more subject to attack than others.

The Chickasaw is free from insects, and seldom fails to produce a crop, but the fruit is not nearly as valuable as the Wild Goose Plum. Of the latter I have some trees in my poultry yard which are bearing nicely. But of all the Plums I am acquainted with, the Damson is the hardiest and most exempt from insect ravages. It is delicious for eating fresh, and for canning or preserving it is unequalled; it is also excellent for drying. Plum trees have always seemed to me to be possessed of some sociable nature, preferring a situation near dwellings. How well I recollect the Damsons growing in the yard near the old homestead of my youth, their branches reaching over the roof of the house, and affording an excellent opportunity to pluck the fruits from the attic windows. Coming to my present domicile Damsons were among the first trees I planted. These are near the house where the fowls run under them, and they have never failed to produce an abundant crop. Plums and poultry grow well together, they seem to benefit each other, and anyone who plants the trees where the fowls have free run under them will not suffer much from insect attacks.

THOS. D. BAIRD.

SHORT CUTTINGS.

Bagging is not only the best preventive against rot in Grapes, but it serves also an excellent protection against light and early frosts.

The Early Richmond Peach is rapidly gaining in favor; it is reported hardier and better than Crawford and many other popular varieties.

Professor Budd says fresh fruits may be preserved during long shipment by wrapping each specimen in tissue paper that has been soaked in salicylic acid. If the journey is very long, use double folds, and fill the interspaces with material similarly prepared.

Vegetables.

SEASONABLE HINTS.

All crops that are to be wintered out-doors should now receive their final covering.

Celery, if left in the ground where it grew, should be hilled up to the tips of the leaves, and afterwards be covered with an additional layer of six inches of soil. Later in the month, all is to be covered with several inches of leaves, or straw, and finished up with stalks or any other coarse material; some old boards laid on the top will give additional security. In wet or very heavy soil this method will be found more successful than wintering Celery in trenches.

Seed Potatoes.—Good crops are sometimes raised from poor seed, and poor crops have been grown from good seed, yet the results of a large number of carefully conducted experiments show unmistakably that it pays to plant only perfect seed.

Potatoes that have been exposed to so low a temperature as to have become "chilled," are materially deteriorated for seed—although they may still be in good condition for eating. The same is true of Potatoes stored in so warm a place as to make sprouting necessary.

The best temperature to keep Seed Potatoes in is from 35° to 40°. The cellar in which they are stored should be neither wet nor too dry; a moderately moist atmosphere is most favorable.

Cold Frames for Storing Roots.—Our last winter's experiment with wintering Carrots, Beets, Turnips, etc., proved so satisfactory that it may serve as a suggestion to those similarly situated.

Finding our furnace-heated house cellar too warm and dry for the best preservation of vegetables, we made our hot-bed serve the purpose, and are just now doing the same thing. After all the soil and decomposed manure was shoveled out and banked around the frame, the roots were spread in layers over the ground in the frame, giving the space of a sash to each kind. All were then covered with about four to six inches of soil. The space between the surface of the soil and the top of the frame was then filled out with dry leaves, and the sashes put in their places. The sashes were never removed except when something had to be taken from the frames. The leaves excluded frost completely and at the same time served as a non-conductor of the sun's heat, so that when, at the time of starting the hot-bed for spring use, the remainder of the roots were taken out, they were as fresh and good as the day they were dug. Thus a hot-bed may be used profitably the year round.

Compost.—A compost heap should be a permanent feature in connection with every well managed garden. Now is a suitable time to start one in an out of the way corner where it may be screened from view by a clump of bushes or an evergreen hedge. Swamp muck is the best material for the basis of a compost heap, but sods or rich soil from a roadside or pasture may be made to serve the purpose. All refuse and offal from the house and garden that will decay should find its place on the compost heap together with all the stable manure, and be mixed with the absorbing material.

MARKET GARDENING IN THE SOUTH.

History.—Social Questions Involved.—Growth.—Locations.—Soils.—Methods.—How to Grow the Different Crops.—Some Great Successes.—Causes of Failure.

BY DR. A. OEMLER.

PRESIDENT CHATHAM COUNTY TRUCK FARMERS' ASSOCIATION.

Second Paper.

Commencing at Norfolk upon a small scale, truck farming has gradually extended down the Atlantic coast to all the larger cities whose trade with the North sufficed to support frequent and regular steamship communication, and along the lines of railroads into and through the whole of Florida, and encouraging the building of new lines, until it reached Mobile and Galveston.

At present Norfolk has during the shipping season a daily line to Baltimore, and, except Fridays, one to New York, and steamers thrice weekly to Philadelphia, Baltimore and Washington. Perhaps a half-dozen times in the season the Old Dominion Line finds it necessary to dispatch two steamers in one day to New York, and even with this augmented facility a large quantity of produce has been known to be left on the wharves for want of transportation to market. In the matter of frequency of steamship departures and their adaptability to the purpose, through sufficient ventilation between decks, Savannah comes next in order with three steamers weekly to New York and one each week to Boston, Philadelphia and Baltimore. The railroads offer facilities from Charleston, Savannah, Mobile, etc., North and West, but the bulk of produce goes, by preference when possible, by sea. This applies both to local and through-freights. Of Melons, however, large numbers are sent from the interior by rail North and Northwest, taxing the capacity of the various lines to the utmost.

The fact that the variety of vegetables grown at Norfolk includes such as the longer passage from more remote southern points precludes from the list of the latter, must increase the bulk of shipments from the former. Such for instance as Radishes, Lettuce, Spinach, and, in a measure, Muskmelons. The two first named wilt too much to command sure and fair prices, Spinach is too liable to heat in the package and Muskmelons or Cantelopes must be picked so very green only as far South as Savannah, to endure the passage, that the income from the crop becomes too uncertain. Increased competition from nearer points than formerly, however, has reduced the area of certain crops at Norfolk, increasing that of others proportionately. Such has been the case with Tomatoes, which, being an expensive and troublesome crop to cultivate, in consequence of the necessity of using glass to grow the plants, have failed of late to be as remunerative as heretofore, and have therefore partially given way to Cabbages and Potatoes. Only a few years ago an extensive farmer had 50 acres in Tomatoes. He gathered and shipped in one day 900 crates, but for want of labor had to leave 40,000 hills unpicked.

Neither of the last two seasons has been favorable; but, if the last had not been even less so than the preceding the shipments would have shown a more considerable increase, as the acreages were greater. Florida farmers suffered, of course, less from the vicissitudes of the weather than those further North. Two disastrous spring frosts either killed some of the early vegetables in Georgia and South Carolina outright, or retarded them, bringing the crops into market and competition with those from Norfolk, reducing the value of all, and, in some cases, completely glutting the market. Later on, continuous wet weather impaired their carrying and keeping capacity by loading the produce with that superabundance of moisture which always tends to induce heating and decay in the packages, however carefully handled. This tendency to decay is greater to occur with crops grown on heavy soils, retentive of moisture, and less on the more sandy and porous soils.

Below are such statistics of the later years' crops as could be obtained to date.

SHIPMENTS BY WATER FROM CHARLESTON.

BY O. S. S. CO.	1881	1882	1883	1884	1885
Miscellaneous vegetables—crts	47,115	62,133	81,332	86,761	90,530
Strawberries—qts		430,000	708,680	504,970	669,565
Potatoes—barrels		45,349	51,460	43,296	60,000
Watermelons.....				25,000	300,000

SHIPMENTS BY WATER FROM

	SAVANNAH.		MOBILE.	
	1884	1885	1882	1883
Miscellaneous vegetables—crts	262,066	237,317	73,535	67,719
Miscellaneous barrels.....	29,203	41,438		
Potatoes—barrels			30,769	33,571
Watermelons.....	355,379	457,687	18,700	8,770

SHIPMENTS FROM CHARLESTON—by water.

	1878	1879
Potatoes—barrels	43,000	28,659
Tomatoes—crates	6,500	5,000
Cucumbers "	7,800	6,500
Peas "	20,250	17,000
Snap Beans "	3,000	2,500
Squashes "	800	500
Beets "	100	100
Lettuce "	300	300
Miscellaneous packages.....	12,000	10,000
Strawberries—qts	600,000	734,093
Peaches—crates..		1,000

SHIPMENTS BY RAIL.

Strawberries—qts	379,700	534,070
Irish Potatoes—bl	25,540	23,659
Watermelons.....	22,176	20,602
Vegetables—crts.	73,116	38,530

NOTE.—These figures are only partial, as will be seen, and will be supplemented in an early issue by more complete figures.

HOW LETTUCE SEED IS GROWN.

Since writing the account of Mrs. Miller's Lettuce, it has occurred to me that a few additional remarks are needed. As a rule, the only way to be sure of getting good Lettuce seed is to grow it yourself.

As things now are, no seed grower can afford to raise Lettuce seed as it ought to be grown. The seedsmen will not pay over 75 cents or $1.00 per lb. for it.

A letter just received from John M. Hunter of Houston, Texas, ordering (thanks to "Elm" and THE AMERICAN GARDEN) one-quarter of a pound of Deacon Lettuce seed, says: "If your seed is pure and you can keep it pure and as good as it now is you ought to have a tremendous trade from market gardeners, and if you have a boy or girl who takes an interest in the growing crop of seed another year, just say to him or her that I will give $5.00 for a lb. of Deacon Lettuce seed from selected heads. I would rather pay $10 or $20 per lb. for such seed than have the common run for nothing."

Mr. Hunter speaks of keeping it pure. That is not where the truth comes in. Any seed grower can secure that by growing his crop of seed separate from other varieties.

The difficulty is this: The seed grower

grows Lettuce *for seed*. The market gardener grows Lettuce for good heads of sweet, tender, succulent leaves. He wants it to "cabbage." These two objects are diametrically opposed to each other.

The way a seed grower raises Lettuce is to get some "stock seed" and sow it in rows two feet apart early in the spring. Thin out the plants and pull out any "rogues" he may see and let the crop go to seed.

If the strain of Lettuce is up to the average he will get a fair crop of seed. If it is a good strain he will get a poor yield of seed. If the strain approximates anything like that Lettuce ought to be, he will stand a good chance of getting no seed at all!

Suppose a seed grower should try to raise Cabbage seed in the same way! The way good Cabbage seed is grown is to select Cabbage plants grown this year; winter them over and set them out for seed next spring.

But suppose we should sow some Early Jersey Wakefield Cabbage seed early in the spring, as we do the Lettuce, and let it run up to seed. Only a few plants it may be would produce seed, but by saving this seed and sowing it again the next spring we should very soon get a strain of Jersey Wakefield that would be a wonderfully profitable Cabbage *for the seed grower!*

The gardener does not want Cabbage that will go to seed the first year, and he has obtained his wish. He can get Lettuce that will not go to seed the first year, if he will take the necessary pains.

I am trying to winter over some Deacon Lettuce sown last spring in hopes of getting seed from them next year. In other words I propose to treat them as we do Cabbage, and see if we cannot make a biennial of it. But this is a plan I have not yet tried. Another plan that gives good results is to sow the seed in a hot-bed and set out the plants early in the spring and then leave the *best heads* to bear seed. Or the seed may be sown in autumn, the plants wintered in cold-frames and the best heads set out for seed.

We shall never have good Lettuce till we stop talking about varieties. The variety has little or nothing to do with it. It is a question of skill and perseverance in selecting good heads to raise seed from.

The fact mentioned by your correspondent "Elm" of the N. Y. Experiment Station that he had tested 150 varieties of Lettuce which are sold under 700 different names, does not show necessarily, a disposition on the part of seedsmen to introduce an old variety under a new name. A little care in selection may give a head of Lettuce so many desirable qualities that it seems like a new and greatly improved variety. And in this way, though an old sort, it gets a new name.

If seedsmen would say, "Here is Tennis Ball Lettuce seed grown from the very best and most carefully selected heads," experienced gardeners would be much more likely to try it than they would any new variety that was offered them. And this is true of Onions, Cabbages, Cauliflowers, Carrots, Parsnips, Turnips, Beets, Salsify, Celery and Radishes. The gardener grows all these plants, *not for seed*, but for artificially increased roots, bulbs, buds, leaves, etc. Crops grown for the seed, such as Peas, Beans, Corn, etc., are improved little by selection. We must look to new varieties. JOSEPH HARRIS.

THE RAM'S HORN SUGAR PEA.

Eatable-podded, or Sugar, or Butter Peas have so far not been extensively cultivated in the United States, while in France and Germany they are as highly prized as shell Peas. They may be grown and used exactly like other Peas, but they have that additional advantage that their green pods are so tender and sweet, that they may be cooked and eaten the same as String Beans. There are several varieties of this class of Peas offered by seedmen, but none has proved as desirable with us as the Ram's Horn, or Southern Mammoth Salad Pea. This variety of Edible-pod Pea has been grown in the neighborhood of the writer from a time "the memory of man runneth not to the contrary," and can be truly said to be acclimated to the Southern States, as its introduction here must have been with the very oldest colonial settlers. It has been superseded in catalogues by the introduction of other varieties and is rarely found save in private families where it has been kept, like an heir-loom, from generation to generation.

THE RAM'S HORN SUGAR PEA.

As far back as 1739 Mons. de la Quintinge, a noted French scientist, in his "Instructions for Fruit and Vegetable Gardens," referring to this Edible-pod Pea speaks of it as the "White, without Parchment, Large-podded or Ram's Horn Pea." The origin of the Pea is unknown, but all authors referring to it mention it as being the oldest and the best. "The pods are large, broad, meaty and crooked," which gives them the name of "Ram's Horn;" vigorous, very tall and very productive, and being thoroughly acclimated yields a full crop of very tender and succulent pods, bearing three weeks longer than seed of northern production.

The proper time for gathering is when the Pea and pod are fully developed; they are then as brittle as German Snap-Beans, and are prepared in a similar manner for the table. The peculiarity of this Pea is its hull. When ripe for harvest the pod contracts to the Pea, assumes a transparency and is almost as thin as tissue paper. As grown here, this Pea measures one inch broad and five inches long, usually carrying six Peas.

The objection to all other varieties of running Peas is the expense of brushing or sticking, but wherever Cotton is grown this trouble and expense may be obviated by using the old Cotton stalks after the crop is gathered; planting the Peas on either side, they will climb and cling to the stalks for support. W. B. JONES.

Georgia.

MINT.

The principal value of Mint consists in the oil which is distilled from its leaves. Large quantities are raised in Wayne County, N. Y., in Michigan, and in Mississippi, the annual product of Peppermint-oil amounting to about forty-five tons. Yet as a garden herb for flavoring sauces, and other culinary purposes it occupies a not unimportant place.

In its wild state it is found along water courses, old stone walls and other damp places, yet it will grow and thrive in any good, deep garden soil. If the roots are transplanted in spring—although they may be taken up at almost any time, if kept moist—they will furnish cuttings all the season. Plantations should be renewed every third year. Cuttings grown in the greenhouse at a temperature of 75° to 80° will, in from six to eight weeks, furnish abundant growth for cutting, and if near a large city market there is always a ready, though limited, demand for Mint. For home use, a few roots in a rockery near the house, or in a mixed border, will supply all the needs of a good-sized family.

W. H. BULL.

FRESH SPROUTS.

Seeds should be kept dry and cool.

Leek may be stored in trenches, by placing the plants upright, the roots close together, similar to the mode of trenching Celery.

Spinach for winter use should be lightly covered with straw or leaves to protect its leaves from injury by frost.

No soil in the world is naturally rich enough to grow garden crops to an advantage and profit; so says Joseph Harris.

Modern gardening, says P. T. Quinn, is simply another term for improved methods of farming, and success either in the kitchen or market-garden, depends upon carrying out these questions.

Cucumber from old seed fruit better, and Melon plants are shorter-jointed and flower at the third or fourth joint, when from fresh seed they would not give a flower until the tenth joint. This improvement of such seeds by age, C. M. Hovey says can be explained on scientific principles: when fresh they are fleshy and contain pabulum which gives vigor to the young plant, but with age they get rid of the surplus food.

Flowers.

FAREWELL TO THE OLD YEAR.

Farewell, old year, we walk no more together;
I catch the sweetness of the latest sigh.
And crowned with yellow brake this wintry weather,
I see thee stand beneath this cloudy sky.

Here in the dim light of a gray December,
We part in smiles, and yet we met in tears;
Watching thy chilly dawn, I well remember
I thought the saddest born of all the years.

I knew not then what precious gifts were hidden
Under the mists that veiled thy path from sight;
I knew not then that joy would come unbidden
To make thy closing hours divinely bright.

I only saw the dreary clouds unbroken,
I only heard the plash of icy rain;
And in that winter gloom I found no token
To tell me that the sun would shine again.

O dear old year, I wronged a Father's kindness,
I would not trust Him with my load of care;
I stumbled on in weariness and blindness,
And lo! He blessed me with an answered prayer!

Good-by, kind year; we walk no more together,
But here in quiet happiness we part;
And from thy wreath of faded Fern and Heather
I take some sprays and wear them on my heart.

THE FLOWER GARDEN IN DECEMBER.

Much work cannot generally be done during this, the dullest and darkest month of the year. There is no better time, however, when plans can be made and matured whereby the flower garden can be made to look prettier next season than it did in this.

EVERGREENS.

Although evergreen trees, the coniferous kinds especially, should find their proper place on the lawn, many of the low growing species are well adapted for planting in flower gardens, where, if properly arranged, they will add much to the variety in summer, and impart a bright, cheerful character in winter. It is at this season, when deciduous trees and shrubs have shed their foliage, that positions can best be selected in which evergreens will be most effective in winter without marring the harmony of the summer garden.

To those who have seen and studied the excellent collections of American evergreens, arranged in their different classes, which are found in the principal botanic gardens of Europe, it seems surprising that they are not more generally grown in their native land. The beauty of habit, vigorous growth and general, graceful contour which many species possess, make them admirably adapted for the decoration of the flower garden as well as the lawn. They are also useful in sheltering weaker and less hardy shrubs and plants. The reason why many fail to succeed with the latter class of plants is principally the want of shelter from piercing winds during winter. Evergreen trees or boughs form just the very best protection of this kind.

Erect growing evergreens, as the Swedish and Irish Junipers, are apt, during heavy snowstorms, to get their branches bent down, and often broken; to prevent this, tie the branches together at several places with strong string.

Among the best evergreens for planting in the flower garden are *Hovey's Golden Arborvitæ*, a dwarf-growing kind of globular form and with bright green foliage.

Geo. Peabody, a perfect little gem, compact in growth, the foliage of a beautiful golden color.

Tom Thumb is another compact growing kind, very dwarf, symmetrical, and well suited for various positions.

Retinispora plumosa and *R. aurea*, from Japan, are hardy, and their graceful, feathery foliage—golden tipped in the latter—makes them attractive objects wherever planted.

MAGNOLIAS.

The many beautiful species and varieties of this peerless genus are far too little seen in flower gardens and pleasure grounds. If lightly protected during the first two or three winters after planting, they generally grow and flower freely when once well established. Now is the proper time to protect those that have been planted last spring and have not yet fully recovered from the check of transplanting. Do not cover too closely, only sufficient to furnish partial shelter, and to protect against the direct rays of the sun. It is not generally the severe cold that kills plants of this kind, as the frequent thawings.

YUCCAS.

Yucca filamentosa is often destroyed in foliage during winter when allowed to stand unprotected; the best way to do with it is to gather the leaves together and tie with a good, strong string. A group of this plant makes a beautiful object in the flower border or on rock work. The leaves are radical, having white threads hanging from their margins. The white flowers are borne on flower-stems about three feet high. *Yucca Whipplyi* is another good hardy plant of this class, and for the Southern States *Y. gloriosa*.

TOP-DRESSING.

Perennial plants of nearly all kinds, and young evergreens especially, are much benefited by a good top-dressing of manure during winter, especially such kinds as are making a weak growth; it stimulates them, gives them better colored foliage and makes them altogether finer and stronger looking specimens. Life is too short to wait for plants when making a weak and puny growth. We want them large as soon as possible and the only way to accomplish this is to give them plenty of food. Healthy plants are always less liable to the attacks of insects than weakly growing specimens, therefore keep them always growing and in a vigorous condition, and less complaint shall be heard from them being destroyed by insect attacks.

M. MILTON.

HEALTH AND PLEASURE FROM FLOWERS.

A WOMAN'S EXPERIENCE.

Seated in my easy chair with leisure to meditate and write, I take this very first opportunity to review my past ten months' work—exultant over my many successful achievements—sorry over my few failures, but in no wise discouraged.

At the beginning of the year I resolved for the twentieth time not to invest a cent in any new plants, as I had already crowded in my flower garden a chaotic mass of every imaginable and conceivable variety of plants that I could buy, beg or exchange for. With a sigh I closed my new catalogues saying, "Well, there's much in it I want, but I have no place for more." But desire was followed by resolve. "Where there's a will there's a way." I began to look around to examine the capacity of my kitchen garden, and to my delight, I concluded with higher culture, I could with one-eighth of ground less manage to raise all the vegetables and fruits I wished and have that area for some new flowers.

My strongest desire lay in having the largest amateur collection of new-named Chrysanthemums. First I thought two dozen would more than satisfy me, as I had already thirty-five distinct, though unnamed varieties. Those came and were tenderly potted, being the very cream of all my catalogues, of various and divers colors and shapes. A little later I concluded two dozen more would be charming to have, ordered, and ended by not only purchasing 100 new varieties but bought two packets of seed, and now to date I have thirty-five old, fine varieties, 100 new-named, and fifty new seedlings.

Being satisfied in that direction I wanted more Roses. Sunset, Md. Cusin, Jules Chrètien, etc., I had one of each, but—I must be greedy—I wanted more. Off went my order, wholesale, and back came my Roses by the hundred. Oh, how I gloated over their promise! Md. Guinesseau, Perle des Jardins, Jules Finger, etc., too numerous to mention; and how I worked in spring to plant and care for them, and how they have so well repaid me for all my care.

Then I became afflicted with the flower fever badly, what I felt unable to buy I began to exchange, and I stand almost aghast at my year's work, and wonder I live to tell the tale. Two thousand bulbs of twenty-three varieties of Lilies, 100 new Roses, 175 Chrysanthemums, and other plants from Maine to California have come to be welcome and cherished pets in my grounds, for I encroached and still encroached upon my vegetable garden until I now have one-half of it in flowers. Three long rows of beautiful and deliciously fragrant Tuberoses, but not satisfied with keeping for my own ground, I had the temerity to experiment with sets to see if I could raise them for the trade, was laughed at and teased about my bulbous fever. Had a brother-in-law to write me 100 miles distant and expostulate with me. No use, at it I went with my whole soul, and with what result! Thirty thousand Tuberoses, as fine and large bulbs as any professional florist has ever raised, are curing in my central yard.

After my Tuberose fever, I ordered a whole case of hardy Holland bulbs, and words can hardly describe the pure delight in just handling them. I could scarcely realize the exquisite beauty folded away in their rough coats; but with full faith and great care they are now planted. Five hundred Hyacinths, 1,000 Tulips, 800 Narcissuses, and Scillas, Ixias, Sparaxis, Lachenalias, Babianas, Alstromerias, Freesias; all of which are potted or planted out in my yard.

In this retrospect I see much left undone, but far more accomplished than in my wildest dreams I had hoped for. With my increase of plants an increase of glass quarters became necessary, and my busy brain went to work to accomplish that. I purchased ninety-three sashes of a church recently torn down, and now a fair and beautiful greenhouse nearly completed, 13½ feet wide by

32 long, greets my eyes with hopefulness.

I may well feel exultant over my year's work, working with this in my mind: "What thy hand findeth to do, do it with thy might." Much enjoyment was derived from the collecting of so many new and rare plants which I hope to enjoy next spring, and from watching the unfolding of their leaves and blossoms I anticipate many a day of rare pleasure. In my year's work are garnered up many pleasant memories of friends and flowers besides preparing joys and occupation in tending my pot-plants in my new greenhouse. My year has been a busy one, and not profitless, but full of intense enjoyment of this my favorite work, cultivating, collecting and caring for God's beautiful flowers. I began the year with impaired health and weakened nerves; its close finds me with much improved health, with nerves stronger and with renewed interest in life and its duties. Outside of everything else floriculture rewards us in this, if in no other way, with better health and clearer minds for other duties of life. Try it, my sisters, and see for yourselves.

MRS. THOMSON.
South Carolina.

CHRISTMAS ROSE.

Helleborus niger.

There was a time when real Roses at Christmas were a rarity, and when the Christmas Rose, from the peculiar habit of the plant to bloom in winter or very early spring, was held in high esteem. But now the florists' art has, in some measure, annihilated seasons and the habits of plants, so that Roses are about as abundant at Christmas as in June. Yet the Christmas Rose is a very pretty and interesting plant, well worthy of a place in the mixed border or among shrubbery. It belongs to the natural order *Ranunculaceæ*, or Buttercups, and its flowers resemble the Marsh Marigold in shape, but are larger, and in the original form pure white. Within recent years the species has been "broken," or hybridized, and there are now a number of named varieties varying in size and many shades from light pink to purple. The plant is a low-growing perennial which should be grown in deep, rich soil, in a shady and sheltered position, and be covered with leaves in winter. If grown in a frame or in pots there will be no difficulty in making it bloom true to name—at Christmas, otherwise it might cause disappointment. It is a native of Southern Europe, and is easily propagated by division of the roots.

THE CHRISTMAS ROSE.

NICOTIANA AFFINIS.

Most persons who have tried this recent introduction, have done so with some misgivings. Being a species of Tobacco it was hardly thought to be a fit occupant of the flower border; yet it has proved to be a valuable acquisition. Its flowers are pure white, of delicious fragrance, produced in great abundance, and continue—well, forever we are almost tempted to say. The plant was introduced as an annual, and may be treated as such, but from what we have seen of it, it behaves very much like a perennial, and the experience of some of our readers points in the same direction.

I am puzzled about the nature of the *Nicotiana affinis*, writes N. T. Lackner. Plants that have bloomed for five months, and were planted out in the garden, have made new shoots and flowered all summer. A large plant in a ten-inch pot, by being well fed, is acting the same way in the greenhouse. It has never stopped blooming since January, and was a mass of flowers all winter. Other plants sown June 26th of last year, wintered in small pots, and planted out this spring, produced an abundance of fragrant flowers all summer. It grows, I believe, under any conditions, and is worthy of a place in every garden.

Our Sweet Peas came up poorly this year, much to our disappointment, at first, but as the plants grew and blossomed, those that were a foot and more apart bore by far the largest and best flowers, and in greatest profusion, from which observation the conclusion may be deducted: Give plenty of room to Sweet Peas.

PROTECTING ROSES.

However hardy a Rose may be, in the climate north of New York it will be benefited by a light covering in winter. The half-hardy kinds, as Teas, Bengals, and most Bourbons have to be well protected if we would winter them safely out-doors, but with the hardier kinds a very light shelter will be sufficient. In either case the plants should not be covered before winter sets in in earnest, generally not before the first week in December.

The easiest and most efficient way is to peg down the plants, and strew dry leaves between them, so as to cover them entirely, then place over them evergreen branches, or brush, or poles to prevent the wind from blowing them away. Hilling up with soil is also practiced by many growers, or the plants may be taken up entirely, placed in a trench in a dry position and covered with soil.

As the hardiest Roses, H. B. Ellwanger named: Abel Grand, Anne de Diesbach, Baron de Bonstetten, Baronne Prévost, Baroness Rothschild, Boieldieu, Caroline de Sansal, Charles Margottin, Countess of Serenye, Edward Morren, François Michelon, General Jacqueminot, Jules Margottin, La Reine, Mabel Morrison, Madame Boll, Madame Jolly, Marchioness of Exeter, Marguerite de St. Amande, Marquise de Castellan, Maurice Bernardin, Rev. J. B. Camm. As the most hardy Monthly Roses: Appoline, Edward Désfosses, Hermosa, Louise Odier, Aimée Vibert, Caroline Marniesse, Gloire de Dijon, Reine Marie Henriette, Bougère, Gerard Desbois, Homer, Madame de Vatry, Marie Ducher, Sombreuil. And a very good list it is.

OUR FLOWER BASKET.

Colocasia esculenta, Tanyah, bulbs have to be kept warm and very dry, else they will surely rot.

We do not know anything mice are more fond of than Tigridia bulbs. After the bulbs are well dried, the safest place to keep them is in a tin box. They must be kept warm.

Chrysanthemums, although generally hardy, suffered severely last winter, even in cases where they were covered with manure. To be perfectly safe, the clumps should be taken up and placed in a cold-frame over winter.

The Window Garden

AND GREENHOUSE.

THE BLUE AFRICAN LILY.

Agapanthus umbellatus.

This old and well-known greenhouse plant appears to become quite a favorite with amateur cultivators, judging from the numerous inquiries respecting its culture that are to be found in our horticultural periodicals. It is a plant of vigorous growth, having thick, fleshy roots and linear leaves, flowering during the summer season. The flowers, which are of a bright blue color, are produced in large clusters on a stout flower stalk about three feet in height.

The plant is of easy culture and succeeds best in a compost of two-thirds sods, one-third well-decayed manure with a fair sprinkling of bone dust; good drainage is also essential to success, for although the plant requires an abundance of water during its season of growth, yet it will not do well if water is permitted to stand around its roots. As the plant must become strong and large before it will bloom it should not be permitted to become pot-bound when small, but should be grown on as rapidly as possible, and shifted as often as necessary until it is placed in a 10 or 12-inch pot; by that time it should be large enough to bloom.

During its season of growth, which is in the summer, the plant should be given an abundant supply of water, but after it has ceased flowering and its season of growth is over, water should gradually be withheld, and during the winter, only enough given to prevent the plant from becoming absolutely dry. It may be brought out from its winter quarters early in May, and as soon as the nights begin to be frosty in the fall removed inside, where it can be wintered over in a light, dry, frost-proof cellar, or under the greenhouse stage, if care be taken to prevent it from becoming too wet.

Propagation is effected by a careful division of the plant, and this operation is best performed in the spring just before the plant starts into growth, but if the offsets are small they should be well cared for and nice specimens will soon be obtained. After the plant has attained its full size, and is growing in a large pot or tub, it should be re-potted—in spring—in fresh soil every two or three years, otherwise it should be watered at least twice a week during the entire season with weak liquid manure.

CHAS. E. PARNELL.

ABOUT CALLAS.

To grow the Calla well, you must give its roots plenty of room, and let the young plants remain about the old one until you have at least a half-dozen stout plants in the tub. I have a seven-year-old plant which I have given plenty of room, and which has not been disturbed in any way during that time, unless the annual removal of a share of the old soil can be called a disturbance, and it has a very different appearance from the Calla plants one usually sees. It has over thirty leaves, some of them standing nearly four feet above the pot, and it often has from three to six flowers at a time. I use a very rich soil from the barnyard, mixed with sharp sand. In summer I give just enough water to keep the plant from drying up. In September I remove as much of the old soil as I can conveniently, and put in new. Then I increase the supply of water gradually. In winter I always apply it warm. This old plant is highly ornamental when not in bloom, because of the profusion and luxuriance of its foliage. When in blossom it is one of the most superb ornaments a conservatory can have. If you want many flowers from the Calla you must let the young plants remain. EBEN E. REXFORD.

ROSES FOR WINDOWS.

The very best Rose for growing in the window is "Agrippina," I am inclined to think. It blooms more profusely than any other variety, and produces more branches,—a necessary condition to the satisfactory cultivation of any Rose, because the new growth must be depended on for flowers.

Next to Agrippina I would place "Queen's Scarlet," which greatly resembles it in habit. But neither of these Roses are as fine as many other varieties. But, if we cannot grow the best well in the house, we must be satisfied with inferior ones which will accommodate themselves more readily to circumstances.

I have no difficulty in keeping them free from the aphis, if I dip them in Tobacco-tea twice a week. Syringing the infusion over the plant does not suffice. As soon as the buds on a branch have developed, I cut it back to a healthy and promising bud, to induce a fresh growth. The red spider will not trouble the plant if you use enough water on it. E.

BONE MEAL FOR IVY.

Have you ever tried bone meal as a fertilizer for the English Ivy? writes a correspondent from Wisconsin; if not, do so. I had an old Ivy which seemed to be in a stand-still condition. I re-potted it; it would-n't grow; then I mixed some bone meal with the soil, digging it in well about the roots. In a short time it began to stir itself. It put out new leaves from the ends of the old branches, and soon new branches started, and during the summer it has made a rapid growth. I give the bone meal credit for it all. Try it.

TROPAEOLUMS.

Many species and varieties of this interesting genus are among the most desirable window plants, especially those of the *Lobbianum* class, which are not excelled for training along the rafters of greenhouses or around the frames of windows. If enough sun is given them they will be a mass of bloom all winter. They should have a rather sandy soil and not too large pots else they are apt to produce more leaves than flowers. It strikes freely from cuttings and may also be raised from seed.

THE CIGAR PLANT.

Cuphea platycentra.

This little gem of a plant is so old that most people have forgotten it, and welcome it as a novelty again when they chance to see it. It is not only one of the most profuse bloomers in the flower border, but when potted it makes a charming window plant, being covered all winter with its cigar-shaped bright scarlet flowers, tipped with a ring of black and white.

ORCHIDS.

CLASSES,—RARITY,—CULTURE.

Orchids abound throughout the temperate and tropical regions of the world, but not in dry, arid districts. They are represented by two classes, namely: terrestrial and epiphytal, both of which contain many lovely species and varieties.

TERRESTRIAL ORCHIDS

Are those that grow in the earth, like our Lady's-slipper, or in the mossy surface on the earth, for instance the *Calopogon*. But these are hardy. Those we grow in our greenhouses are tender and comprise *Bletia* from Mexico, *Phajus* from China, *Calanthe* from India, *Disa* from the Cape of Good Hope, *Cypripedium* from Colombia or Borneo, and several others.

EPIPHYTAL ORCHIDS

Are the ones commonly called Air-Plants. They abound in warm, moist countries, but do not occur in cold countries. In the Southern States one or two inconspicuous flowering species of *Epidendrums* are found, and of recent years several of the epiphytal Orchids peculiar to the West Indies have been discovered in Florida. None occur in the Northern States. These Orchids cling to the bark of trees by their thick, matted roots, and occur in bunches high up among the boughs or attached to small branches or on mossy, rocky places. Epiphytes are not parasites, they do not live upon the juices of the trees to which they fasten themselves, but on the moisture in the atmosphere. The graceful *Oncidiums* and gorgeous *Cattleyas* of Brazil, magnificent *Dendrobiums* of India, chaste *Phalænopsis* and choice *Vandas* of the Eastern Archipelago, and the curious *Angræcums* of Madagascar are notable examples of epiphytal Orchids.

WHY ORCHIDS ARE CHOICE PLANTS.

Because the desirable kinds have superlatively lovely flowers, and in most cases these flowers last a long time in perfection, many of them as those of *Angræcum eburneum*, thirteen weeks. And as cut flowers, no blossoms, "everlastings" omitted, last longer. With a love for them, and attention and convenience for growing them, Orchids are easily grown, "live for ever," bloom year after year, and increase in size and value.

WHY ARE ORCHIDS SO EXPENSIVE?

Because we cannot propagate them as readily as we can Carnations or Fuchsias, by cuttings, division, seed, or any other means; indeed, it is extremely slow work, and the vast majority of the Orchids in cultivation have been imported from their native wilds. Standard kinds, as *Dendrobium nobile*, *Lycaste Skinneri*, *Cypripedium insigne* and *Odontoglossum Alexandræ*, have an established value and are always salable. In price, for nicely established, flowering plants, they rate from $2 to $5 each, or more or less according to the size and condition of the plants.

THE HIGHEST PRICED ORCHIDS

Are newly discovered and introduced species, for instance, *Vanda Sanderiana*; extremely scarce species as *Cypripedium Godefroyæ* and *Cattleya labiata*; extremely fine and rare varieties of species, for example the white-blooming varieties of *Lycaste Skinneri* or of *Cattleya Skinneri*; and desirable garden hybrids of which the stock is limited, as in the case of *Cypripedium Morganianum* and *Cattleya Exoniensis*. While these are highly

prized by Orchid-fanciers, beginners should let them alone; for their purpose good, common sorts are much to be preferred.

COOL ORCHIDS.

Disas, *Masdevallias*, many *Odontoglossums* and some others are commonly called "cool" Orchids because they are natives of high mountain altitudes, and cannot be grown satisfactorily except in a cool (but above the freezing point) temperature and moist atmosphere. From this we might infer that these "cool" Orchids would be the best for amateurs to begin with, but as a rule they are not. Such excellent gardeners as Robinson, Gray, Allan, and Harris grow them well, but in the majority of Orchid-growing gardens, the "cool" Orchids are the most wretched of all.

BEST ORCHIDS FOR BEGINNERS

Are those of "cast-iron" constitution, that will bear a deal of rough usage and still grow and flower, and will grow well in the sitting-room window. Half-a-dozen of these are *Dendrobium nobile*, *Lycaste Skinneri*, *Cœlogyne cristata*, *Cypripedium insigne*, *Odontoglossum citrosmum* and *Maxillaria picta*. All of these will thrive in a winter minimum temperature of 45°.

THE "SOIL" FOR ORCHIDS

Is nothing but clean, fresh sphagnum (swamp) moss, broken pots washed clean, and charcoal. For terrestrial Orchids many growers use turfy loam and peat, also for many epiphytal Orchids they use fibrous peat mixed with the moss, but as every exotic Orchid—terrestrial or epiphytal—that I know of can be grown in perfection without either loam or peat, I should advise beginners to confine themselves to the moss alone. Poor peat is miserable stuff. After a few months of use it becomes pasty and sour and the roots that have worked their way into it die.

Terrestrial Orchids should be grown in pots, but epiphytal ones may be grown on blocks, in wood, log-cabin-like baskets, or in pots, but as all can be grown in pots I shall confine myself to pots. The pots should be well cleaned both inside and outside. For *Cypripedium* I half-fill the pot with broken pots and charcoal for drainage, then mix finely broken potsherds and charcoal with live moss, and in potting use this compost to fill up to the brim of the pot with, and finish off with a layer of clean moss. For *Lycaste*, *Maxillaria*, *Cœlogyne* and *Odontoglossum*, I use about the same, but as all of these have pseudo-bulbs I am very careful that these "bulbs" sit clear above the compost, for if they do not, they together with the eyes or new growths that emanate from their base are apt to rot off. For *Dendrobium* I use less compost and more drainage. In all cases the compost should rise above the pot.

WATERING ORCHIDS.

I keep my *Cypripediums* well watered all the year round. But all the genera having thick, fleshy, pseudo-bulbs or stems, I keep somewhat dry in winter and moist in summer, but at any time avoid keeping them so dry as to cause them to shrivel. Avoid pouring water on their "bulbs" or crowns and observe that water never lodges inside the young growths, else they may rot off. Of course, dewing them gently overhead in the afternoon is beneficial to them, but see that no water lodges on the leaves or in the growths. Without a moist atmosphere Orchids cannot thrive. While we winter Orchids in our windows, in summer they should be put out-of-doors, where they can have an abundance of water, where direct sunshine cannot reach them, and they are protected from drip and drenching rains. Don't plant them out.

WM. FALCONER.

LYCASTE SKINNERI.

Lawn and Landscape.

PROTECTING THE LAWN.

Late autumn is the best time for top-dressing lawns. But little evaporation goes on at this season of the year to draw off the most valuable and readily available portion of the fertilizer applied, as is the case with top-dressing applied in the hot, dry weather of mid-summer. Top-dressing in mid-summer may sometimes be necessary as a protective mulch for the grass roots in times of drouth; but for the real work of fertilizing, fall or spring top-dressing is vastly superior to that of summer. The rains and melting snows of winter and spring carry the fertilizing material down through the sod, and distribute it where the roots can get a hold upon it readily. This is especially the case with barnyard manures no matter how well rotted they may be when applied. It is the juices and soluble portions that get washed down within reach of the roots, that do the work. Its bulk remains above ground, and, unless very fine indeed, may have to be removed after it has served its purpose. It is easy to be seen that such manure applied to a cleanly shaved surface like the lawn, in scorching, dry weather, is extremely liable to lose the largest share of its *available* fertility by evaporation.

I often wonder that lawns look as well as they do. To be sure the soil is, or certainly should be, made very rich to start with; but how much of this deep, rich soil is really available to the limited roots of the closely cropped lawn grass? Where the top growth of plants is constantly kept down from the very start, the root growth is also proportionately limited. Rank-growing meadow grasses send down roots sometimes to the depth of several feet, but the roots of lawn grasses descend but a few inches. No matter how deep and rich the soil may have been made at the start, the surface must be kept fertilized if we would keep up that deep, rich, velvety green that is the great beauty of the lawn.

Again it is a wonder that the lawn does not suffer more from drouth than it does. What other portion of garden or field is kept so exposed to sun and wind? Its surface never has that protective covering of plant growth that Nature intended as a provision against drouth and excessive evaporation. The cuttings from the mower fall back upon the lawn to be sure, but as a protection to the roots what do they amount to after the sun has had a two-hours' chance at them?

Still fewer lawns receive proper attention in winter. The smoothly cut surface has nought to protect it from alternate thawing and freezing that is so fatal to all grass roots. It has not growth enough to catch and hold the snow, that best of all mulches, where it can be held evenly over the ground. An open, variable winter means partial ruin to thousands of lawns.

Well-mulched lawns are comparative rarities. Where one is mulched in autumn twenty remain bare and unprotected. It is a great pity, after a lawn has become well established, to allow it to be damaged in this way. A coat of partially decomposed manure would save the sod, and at the same time furnish the needed fertilizing material. This mulching should be applied late in autumn or early winter after the surface of the ground has become frozen. Mulching then will *keep* the ground in a frozen condition, thus preventing the working of mice and moles in the soil that might be induced to take refuge among the mulching material.

In winter we can best see the necessity of providing evergreen wind-breaks for the lawn. An exposed, wind-swept lawn is much more difficult to protect than a sheltered one. If one is near a forest where evergreens are to be had, he would often do well to cut a number of good-sized ones, bore holes in the ground and set the stems in them about the lawn in a hedge shape, or so distributed that they will best serve as wind-breaks to exposed portions. This is an excellent recourse until natural growth can be provided where wanted. W. D. BOYNTON.

HARDY RHODODENDRONS IN NEW ENGLAND.

I was quite interested to read the statement in THE AMERICAN GARDEN that many or most of the supposed hardy Rhododendrons had succumbed to the inclemency of the winter, because it fully corroborates my statements made in the "Magazine of Horticulture" twenty-five years ago.

In 1844 on my first visit to Europe, I spent a day with Mr. Waterer of Woking, father of the present Mr. Waterer, and an enjoyable time I had looking through his immense plantations of this beautiful shrub, though it was in September. But I could well imagine the splendors of the display in June. What struck me was the great number of beautiful standards six or more feet high. A day and night I staid with Mr. Waterer enjoying his kind hospitality, and had an interesting chat with him in regard to the production of seedling Rhododendrons and Azaleas, stating to him that the old *R. arboreum* was a greenhouse plant with us, and unless the hybrids which he had produced were not nearly or quite as hardy as our *R. Catawbiense*, there was little hope of introducing the splendid varieties he had reared. He stated that he had fine seedlings of *R. Ponticum* which were quite as hardy as the *Catawbiense* and far more beautiful, with a variety of colors though not so grand as the semi-hardy sorts; and with his aid I selected twenty kinds, two plants of each for trial.

These hardy kinds were as follows, which I take from the invoice before me dated October, 1844.

Delicatissimum, *Everestianum*, *Bicolor*, *Bicolor flore pleno*, *Cœlestinum*, *Purpureum elegans*, *Multimaculatum*, *Pictum*, *Roseum elegans*, *Cœlestinum grandiflorum*, *Gloriosum*.

The other nine were varieties which Mr. Waterer thought were just as hardy, though they were a further remove from the *R. Catawbiense*.

All the plants were carefully planted in well prepared soil, and every attention given to have them succeed. For one or two years they all appeared about of the same hardiness, when we had one of our severe winters, and then all were seriously injured and partially killed but the above named sorts.

I at once came to the conclusion that no Rhododendron was perfectly hardy, unless grown from *Catawbiense*. I began raising seedlings from those that survived, and have produced a race just as hardy as the Oak. To be sure there are no crimsons and scarlets among them, but white and all intermediate shades between that and *Purpureum elegans*.

My imported plants are now forty years planted and fully 15 feet high, as are also many of the seedlings I raised from 1847 to 1850. From 1844 to 1860 I planted more than 200 of the finest varieties of Rhododendrons to be procured in England, Belgium and France, and I have not to-day one single plant left in the open ground.

It was after such experience that I made the statement that none of the so-called hardy hybrids were perfectly hardy in our climate, and although it was denied by many cultivators, the statement of THE AMERICAN GARDEN seems to corroborate my opinion of twenty-five years ago.

Boston. C. M. HOVEY.

RHODODENDRONS IN MARYLAND.

Let me add, writes "Chestnutwood" from Hampden, Md., a few varieties of Rhododendrons which have withstood last winter well with me, besides those mentioned in September number of AMERICAN GARDEN. *Abraham Lincoln*, *Aurora*, *Bertie Parsons*, *Bicolor*, *Blandum*, *Blandyanum*, *Candidissimum*, *Cœlestinum*, *Chas. Bagley*, *Delicatissimum*, *Gen. Grant*, *Minnie*, *Purpureum crispum*, *Doctor Torrey* and *Amarantinora*.

As an edging for Rhododendron borders *Daphne Cneorum* cannot be recommended too highly, being perfectly hardy, standing pruning well and giving forth its delicate, sweet-scented, pink flowers from early spring until late in autumn.

VALUABLE NEW TREES AND SHRUBS.

In answer to an inquiry about the best ornamental trees and shrubs of recent introduction, S. B. Parsons names the following:

Cornus florida flore rubro, Red Flowering Dogwood.—This is without exception one of the most desirable and most showy flowering trees, which will surely meet with general favor. To the well-known charming qualities of the common Dogwood, with its rich autumnal foliage, it adds red flowers.

Cornus florida pendula, Weeping Dogwood.—A form of the common Dogwood with perfectly drooping habit and the upright leading stem of the weeping Beech, which will obviate the necessity of high grafting or training. Few weeping trees have so many good qualities.

Euonymus alatus, Cork-barked Burning Bush.—A small tree possessing all the excellent qualities of the genus, with the peculiar cork bark and a charming vermilion-tinted autumn foliage.

Euonymus Yeddoensis, Japanese Burning Bush.—The leaves and stems of this species are larger than those of the European kinds, and its autumn foliage is most striking.

Viburnum latifolium, Broad-leaved Snowball.—This has larger foliage than the Japanese Snowball, and a more vigorous habit. Its striking character makes it valuable for landscape effect.

Viburnum latifolium variegatum is a beautiful variegated form of the preceding with white and green foliage.

Hypericum aureum, Golden St. John's Wort.—A valuable and charming dwarf shrub of symmetrical habit and abundant large, yellow flowers blooming through the summer.

Foreign Gardening.

GARDENS IN ALGIERS.

The suburbs of this strange, old town, placed, as they are, on a northward-facing hill, from their cool exposure are favorably situated for gardening. The want of water, the great natural difficulty of the town, and indeed of the whole province, is overcome by a system of irrigation, the supply being carried through aqueducts, some of ancient, and others of recent construction. The climate suits the greater part of what are classed as sub-tropical plants.

Within a mile or two of the town, and mainly in the northwestern suburb, are many gardens, old and modern. Here in former days the wealthy Arabs had their villas, with gardens of many acres carefully terraced and irrigated. Some of the older ones are rich in picturesque groups of Olive and Carruba, stately Cypresses, rambling Vines and gnarled Pomegranates, whose pale gray stems, polished undulating leaves, and brilliant flowers are to a northern eye a strangely striking picture of plant beauty.

The high garden walls, roughly plastered, and originally whitened, but now dim and gray with age, were not hidden by groves of Orange, Lemon or Shaddock. Stately Bamboos, Cypress or Myrtle, are clothed with a variety of fine rambling plants, of which *Bougainvillea*, *Plumbago Capensis*, *Solanum Jasminoides*, white Jasmine, and Tea and cluster Roses are perhaps the most frequent. Hedges are made of Lantanas; *Magnolia grandiflora* is a very large tree; weird Prickly Pears are draped and festooned with *Clematis cirrhosa;* and the white Brugmansia rises high and overtops the wall, its great, white trumpets and large leaves borne aloft on a sheaf of straight, strong stems.

Date Palms form groups of majestic beauty; Rosemary is at home, and is commonly used for low hedges and edgings, but is apt to ramble away at will into forms of picturesque raggedness. Poinsettias grown as eight-feet-high standards and pruned annually with a bill-hook, are a mass of scarlet glory at Christmas. Ipomœas, crimson and blue, and Bignonias ramble through trees and bushes; *Tecoma Australis*, either rambling or trained to walls, surprises one by its delicate beauty; and Hibiscus of kinds are frequent garden plants. In open-air cisterns are strong growths of Arums, Nelumbiums and Papyrus.

Sometimes a garden encloses a half-wild, narrow dell with a trickle of water. Here will probably be a thick growth of Oleander and the wild *Arundo Donax*, the great Reed often 30 feet high; then clumps of *Acanthus mollis*, and perhaps a grand, old, white-stemmed Bay, with straight, vigorous, young growths shooting from the base. In such a dell, damp, sheltered, and half-shaded, may generally be found a grove of Bananas, those conditions being suitable for their cultivation.

The Arab houses are built of rubble masonry, plastered and invariably whitewashed both inside and out. The central court is often highly decorated; the passage or gallery that gives access to the upper rooms is supported by horse-shoe arches springing from slender, twisted columns. Between and over the arches the wall space is panelled with glazed tiles of fine design and coloring, generally of two or three colors on white ground. The railing which forms the parapet of the gallery is of wood-work, elaborately pierced and turned. In such a court, a few small Palms in tubs and other suitable subjects form delightful pictures of combined house and plant beauty.

Many of the French and also the English winter residents who have built villas in the beautiful suburb of Mustapha have wisely adopted the Arab's style of building, which, though externally of extreme simplicity as to its main parts, groups admirably with the evergreen trees of the country, and with the wealth of flowers that these gardens are capable of producing.—*London Garden.*

A COCHINEAL HACIENDA IN GUATEMALA.

Cattle ranches, sheep ranches, even chicken ranches, are common enough in the United States, but a bug ranch is indeed a curiosity! In this queer country the raising of hemipterous insects of the bark-louse family, notably the *Coccus Cacti*, or Spanish cochinilla, is a profitable, if not a pleasant industry. In this portion of Guatemala vast plantations are devoted to the cultivation of the "Indian Fig," or Nopal, a Cactus, *Opuntia cochinillifera*, especially for the nourishment of bark-lice. Between the altitudes of 3,000 and 5,000 feet is the favorite locality for cochineal raising, particularly in the vicinity of Guatemala la Antigua, the ancient Capital.

The cochineal hacienda, which we were invited to visit, is the property of Senor Don Felipe Ortiz de Espanosa, and lies about six miles from the city of Quezaltenango. The Espanosa family reside during half the year upon it, in the midst of unnumbered millions of bugs. Happily the insects are not migratory in their habits, but cling with remarkable pertinacity to their Indian Figs, or otherwise a residence among them might be the reverse of agreeable.

The hacienda is walled and bastioned like the domain of a baron of old, with corner towers and loop holes for guns, and shows indubitable traces of having withstood many a revolutionary siege. Upon arriving—accompanied by a pleasant party of Castellanos from the city, and escorted by the genial proprietor—we galloped, according to universal custom, through the one front door of the casa, directly into its inner court, where, amid an indescribable conglomeration of dogs, pigs, goats, burros, and other domestic animals, our horses were given to the care of the servants, and ourselves warmly welcomed by the Senora de Espanosa and her bevy of dark-eyed daughters. Being only nine o'clock in the morning, it was, of course, too early by some hours for breakfast; but, under the blossoming Lime trees of the garden, coffee was immediately served, accompanied with *pan dulce* (small loaves of sweetened bread), goat's milk cheese and Pomegranates—all of which delicacies, you may be sure, disappeared in a twinkling before American appetites, "sharp set" by a six-mile morning canter!

Breakfast was served at the usual hour (about one o'clock P. M.), consisting of a dozen elegant courses, with excellent Spanish wines and all imaginable fruits and salads, supplemented with cigarettes for both ladies and gentlemen, and strong, black coffee. At five o'clock came the inevitable chocolate, with more *pan dulce*, cheese and wild honey. Dinner we could not remain for, though pressed to do so, as that meal is never partaken earlier than seven in the evening, and we were obliged to return to the city to meet engagements on the morrow.

The Espanosa plantation of *Opuntia cochinillifera* includes 1,000 acres, and the modus operandi of cultivating the insects is most curious. They require about the same care that is ordinarily bestowed upon silk-worms, and probably the occupation is not more loathsome of caring for crawling and wriggling creatures. During the last days of May, immediately before the annual rains begin, great branches of Opuntia covered with insects are cut off and stored in a building erected for that purpose, to protect them from the weather. At the close of the wet season (about the middle of October), the plantations are restocked from these supplies by suspending little nests—made of henequin, jute, maguey, or any other soft, woody fiber—upon the spines of the growing Nopal, each nest containing a dozen female insects. Warmed by the tropical sun, they soon emerge from their semi-comatose condition and begin to lay eggs with marvelous rapidity, each female producing more than 1,000 young. The new crop spreads over the plants immediately, the females at once swelling to surprising size, and attaching themselves so closely to the Nopal as to become almost a part of it—resembling vegetable excrescences rather than animate insects. In this condition they are gathered for cochineal, none but the pregnant females being valuable for commercial purposes. The males are comparatively few in number, not more than one male to 150 females, and are of no use for coloring material; the females are picked off with a blunt knife and killed by dipping in boiling water, or baking them in heated rooms or on plates of hot iron. It requires not less than 70,000 of them to weigh a pound.

Occasionally a bug distemper breaks out and devastates entire plantations—as in Guatemala a few years ago, when the *haciendados* were obliged to clear out the old stock, root and branch, and begin anew. The coccus are also fed upon by birds, mice and the larvæ of other insects—the last-named destroyers sucking out the body and leaving only the empty skins.

The high price of cochineal has led to the substitution of other articles for dyeing, lac, madder and aniline having superseded the coccus to a great extent. Various articles are used in the adulteration of cochineal, and "the tricks of the trade" rival the Yankee pine ham, sawdust ginger and wooden-nutmeg industry. Powdered talc, or carbonate of lead, tied in a bag and shaken with the insects, adheres to their wrinkled bodies and greatly increases their weight. Grains of a substance prepared from clay or colored dough, have been manufactured by enterprising Frenchmen to precisely imitate coccus, and palmed off upon an unsuspecting public. Millions of pounds of candy and bonbons are annually colored with these powdered insects—a not very appetizing thought when the facts are considered!—*Fannie B. Ward in the "Times."*

Rural Life.

COUNTRY LIFE.

ITS SUBTLE CHARMS.

I have found my rural felicity not a little heightened, not only in summer but in winter, by picturing to myself what people are doing in the city at any given time. For instance, it is about five o'clock of a December day. My possible self is hurrying up-town after a day of office-work, for the purpose of donning a neck-tie and a flowing shirt-front and screwing myself into a dress coat, preparatory to a dinner-party, where I shall be cornered for hours between mental insipidity and physical dyspepsia. Or, I sally forth from my own comfortable board and fire-place to pay my social debts in a round of utterly barren calls. Or I figure on the platform of some decorous and dreary public meeting, or sit like an owl on a committee or Board, or respond to some card of invitation to look at Solomon Smart's last achievement. Whereas now, apart from the whirl alike of Wall Street and the Avenue, the banquet and the bore, the gilded apedom of the reception and tinsel of the play, I watch the sunset kindle on the mountains and tinge the snow of the lawn into a rose-color. And when the shadows have closed about me, I revive dear old Cowper's picture with Nineteenth Century improvements:

"Now stir the fire and close the shutters fast,
Let fall the curtains, wheel the sofa round.
. . . . . .
So let us welcome peaceful evening in,....
And all the comforts that the lowly roof
Of undisturbed retirement and the hours
Of long, uninterrupted evening know."

One can really *read*, or better still be read to, on a winter evening in the country. Our literary range is not all cram and newspaper. Books which are books can be assimilated. "Classics" come to mean something more to us than a row of bibliothecal fetiches upon our shelves. "Reading aloud," though seemingly a slow process, is really a time-saving as well as labor-saving device, since each hour thus spent is to be multiplied by as many as the household group contains. Happy the man who has been fortunate enough, especially after a somewhat storm-tossed or sun-burnt life, to drift into some such eddy, ringed around with quiet mountains and green shores, where he can lie with furled sails and slowly dripping oars and see the white caps and hear the dull reverberation of the world's roar beyond. It is (to vary the metaphor) like standing under a porch on a rainy day, or in a Club-window when a procession passes.

ITS STERN REALITIES.

I have a wholesome and inspiring sense of reality in the country. I feel myself "close to Nature's heart." I have the "patterns in the mount," the antitypes of those things which make the grace and grandeur of cities. They have pictures, I have the landscape. My woods and rocks furnish the originals of their Gothic arches and Corinthian pillars, their stately arcades and colonnades and vistas. What are their frescoes and artistic decorations alongside of my skies and autumn foliage? All the stillness and softness and color and song which they contrive and create, which they fence off and hollow out from noisy streets and in the cave-like center of stony and staring houses,—what is it all but the attempt to reproduce what comes to me unbidden on the most unstinted scale, poured over all my life, without money and without price?

And yet here comes in one of my *stern* realities. Country people are apt to be the last to understand that the beauty of the country is in its naturalness,—its sincerity, so to speak. Therefore the most thrifty region is not necessarily the most picturesque.

There is rather a disposition to be ashamed of poor, wild nature with its rustic, barefoot, sunburnt charm. There is a mania to "slick up." Paint must take the place of the soft, rich pigments of lichen and weather-stain. Right angles must strike their discord into the gentle curves and tangled diversities of native form. A Vandal architecture drives out the Gothic. A man is famous as he lifts his axe upon the thick trees. Even the spired or trailing evergreens must be trimmed into grotesque and vulgar shapes. We need to learn the art of letting alone. The "smart" epoch of civilization is more savage than the barbarous. The first impulse of art is to destroy nature, to create a desert and call it culture. Later stages consist of efforts to get back to nature,—or rather, to revive its semblance. And that art which most nearly restores the old despised and crucified truth of nature comes to be recognized as the truest art.

The unhealthiness, if not the unconscious charlatanry, of Thoreau is well illustrated in his remark, "I love nature partly because she is not man." On the contrary, I love nature because it is man; or rather, because all nature becomes human as soon as man gets where he can see his face in it. Nothing marks the fineness of the Greek mind more than this detecting of a personal and spiritual element in the natural world, and its vital and mystic identification with man. Their personification of the elements and objects of the out-door world was no mere fancied resemblance or poetical conceit. It was the result of the highest imaginative insight, and of the most delicate and even religious feeling. As so charmingly expressed in the beautiful lines of Horatio Nelson Powers, they heard the

"Ecstatic rhapsodies that run
Along the bark that feels the sun,
The laugh with which the buds unfold;
The passion in the pollen's gold.
They heard the faint, delicious beat
In hearts of Roses, converse sweet
In airs that toy at twilight's hour
With Apple-bloom and Orange-flower,
The amorous whispers of the grass
As skylarks brood and fireflies pass,
The dew's desire, and griefs that make
The thunder's fiery heart-strings break.
To them were told the dreams that lie
Deep in the Lily's languid eye,
Legends that ferns and corals store,
In books of rock and ocean's floor,
The prayers that out of pastures cry
When scorched beneath a brazen sky,
Strange syllables that from the ground
Speak like the naked soul of sound,
And all that birds in love relate
Of happy flight and tender mate,
And what the tribes of insects tell
Of their incessant miracle."

SUMMING UP.

The subtle charm of living in the country may be summed up in a word or two. It is the revival in our "embers" of something "that nature still remembers,"—of a wild, open-air, primitive existence when man was on a footing, both as friend and foe, with the animal tribes, and rooted like the plants in his mother earth. We are twin-births, every one of us. A red and hirsute Esau contends with the smooth Jacob of civilization. He is sure to get worsted in the end; but he is not dead, and will ever and anon muster his Bedouin forces for an onslaught upon the household gods and the sleek prosperity of his rival. Evolution at times has to give way to revolution. Hence the town is ever overflowing its dykes, and spreading itself over the fields. The child's vacation at grandfather's farm, the weary clerk's week or fortnight out of the store or office, the emptying of all the brown-stone fronts in summer, the tribulations of "country board," the concourse around a bit of grass or a spouting fountain in a city square, even the rowdy excursion on a Sunday steamboat, are all forays of the gentle or ungentle savage within us in search of the hunting-grounds of a dimly remembered past. We are always coasting along a primal continent of Palms and painted Indians, whose wafted odors we faintly catch and whose drifted blossoms cross our path till the crew, unmindful of worldly-wise old Ulysses, are crazy to go ashore.

And so we go into the country. And if we be truly inspired with the "primal sympathy," we shall find in every sight and sound and smell a soothing and a suggestion, which meet a deeper need than that of the senses. In the green pastures and beside the still waters He restoreth my *soul.—Dr. F. N. Zabriskie in Christian Intelligencer.*

HEALTHY HOUSES.

Houses and cottages in the country as well as in towns are frequently so ill constructed, says Dr. J. Sinclair in Laws of Life, that instead of being healthy abodes they are really traps for catching disease.

Among the sanitary arrangements which should be attended to, the following are of vital importance:—That the surroundings of the house are free from anything likely to give rise to bad smells. That there is a hall or porch, so that the door of the sitting-room does not open directly to the weather outside. The want of this protection is for half the year a certain cause of injurious draughts and absence of comfort. That the windows of every room open at the top. That there are drains for conveying away slop-water. These should be trapped outside. If there is a sink pipe inside, this should never be continuous with the drain, but open some inches above the outside trap. This interruption prevents sewer gases entering the house through the sink pipe.

Privies with cesspools, on the old-fashioned plan, are always a nuisance, and are only to be tolerated when well away from the house, the cesspool small, and used only as an ash pit. All dry refuse should daily be thrown in, and the contents kept dry. A valuable manure can be thus formed. Where houses are crowded together, particularly among the laboring classes, the privy cesspool should be done away with as a nuisance and injurious to health. If it is not expedient to have water-closets, then a dry earth system should be adopted, provision being made for the regular removal of the pails. This essential part of dry earth systems can only be properly carried out by the local authorities.

Exhibitions & Societies.

AMERICAN HORTICULTURAL SOCIETY.

The executive committee has decided to change the meetings of the society from annual to biennial, alternately with the meetings of the American Pomological Society. It was also decided to change the time of meeting from January to September. The next meeting of the society will be held at Cleveland, Ohio.

MISSOURI HORTICULTURAL SOCIETY.

This society will hold its twenty-eighth annual meeting at Warrensburg, Dec. 9-11, '85. It is expected to be one of the best meetings ever held, and as many members as possible should be there. Reduced rates on the railroads, free entertainment, a good programme, and a display of fruits are some of the features.

NEW JERSEY STATE HORTICULTURAL SOCIETY.

The annual meeting of this society will be held in the Court House at Trenton, during the last week of December. The programme has not been received at this date, but we are informed that strenuous efforts are being made to make this one of the most interesting and useful meetings of the kind ever held in the State.

MICHIGAN STATE HORTICULTURAL SOCIETY.

The annual meeting of the Michigan Horticultural Society will convene in Benton Harbor, December 1, 2 and 3, with the Berrien County Horticultural Society. Delegates will be entertained by members of the local society and everything will be done to make this a notable event in the history of Michigan fruit culture.

The programme of topics for discussion is full and varied, and is so arranged that each session will be devoted to the discussion of one special branch of horticulture, namely: Market Fruit Growing, The Vegetable Garden, Ornamental Horticulture, Amateur Fruit Growing, Arboriculture. This is an excellent plan, worthy of imitation by other societies; it facilitates work, and prevents the rambling character which discussions on such occasions often take.

In connection with the meeting there will be an exhibition of fruits, vegetables, flowers, etc. Railroad certificates,—at reduced rates,—and further information may be obtained from Secretary Chas. W. Garfield, Grand Rapids, Mich.

NEW YORK'S CHRYSANTHEMUM SHOWS.

The intensity of the Chrysanthemum craze in New York has been so great that it seems hardly possible that it can be of long duration, and yet has already continued and increased for three years. The great strength of the Chrysanthemum,—without regard to its intrinsic merit,—lies in the season of its blooming, at a time when it actually has not competition from out-door flowering plants. Yet, on the other hand, it is so easily grown and propagated that the flowers have become as abundant and cheap as field Daisies in summer, so that commercial florists do not find it profitable any more to handle them, and consequently are not anxious to encourage a fashion which results in their loss. However near or far off its day of doom may be, the improvements which have been accomplished in Chrysanthemum flowers, and the stimulus that has been given to floricultural taste in this city are of incalculable value, and their beneficial influence will remain, even after the fashion of the day has faded away.

NEW YORK HORTICULTURAL SOCIETY.

For the first time Horticultural Hall was taxed beyond its capacity, so that the basement of the large building had to be cleared and made accessory to the grand Chrysanthemum Exhibition held November 5th, 6th, and 7th.

The main hall was devoted exclusively to potted plants, while the cut flowers were accommodated in the lower floor. To one not versed in the intricacies of Chrysanthemum variations, the sight must have been bewildering, and from the expressions of delight and wonderment heard from most visitors, to many of them the show must have appeared a kind of revelation.

The standards were principally arranged on the rear platform so as to present a very ocean of blaze and color, the whole producing a grand effect. The height of the stems of the standards varied from two to five feet, the tallest specimens being in all eight feet high, but those of five to six feet produced a more pleasing effect. An odd-looking innovation were the grafted standards raised by John Farrell, gardener to Wm. Barr. From four to six different varieties each of a distinct color had been grafted upon one stem, very much like different varieties of Apples or Pears may be grafted upon one tree. These singular-looking specimens, of which there were a dozen or more, attracted perhaps more attention than anything else in the hall, and to those who have limited space and yet wish to grow many varieties, the plan recommends itself.

The bush plants were generally remarkably well grown, of an average height of three to four feet and some over three feet in diameter. John Thorpe's seedling "President Cleveland," a beautiful white variety, was a magnificent specimen; it had nearly 400 flowers open at the time, and was sent to Washington and presented to the president, who was well pleased with the gift. "Mrs. R. Brett," deep golden, was another notably fine specimen plant.

But, beautiful as the pot plants were, the glory of the exhibition was in the cut flowers. A Chrysanthemum flower of *seven* inches in diameter may seem an impossibility to many of our readers,—it seemed so to us previous to this exhibition,—but here they were, by actual measurement; flowers of six inches in diameter could be counted by the hundreds, perhaps thousands. It was a sight to be remembered, these rows upon rows of mammoth flowers, and yet, we fear, the exhibition of such artificially produced flowers may cause no small degree of disappointment to visitors who copied the names of the varieties expecting to raise like flowers by simply planting the variety. In order to produce such large flowers only a few flowers or only the terminal ones are allowed on the branches, all the lower buds being broken out; thus by concentrating all the nourishment of a branch into one flower its size increases to comparatively enormous dimensions. Yet the process is not difficult, and may be practiced by any amateur, and although the number of flowers is reduced, the actual amount of color on a plant and its effect is not diminished. The flowers from E. M. Allen, Woodbridge, N. J., which were the finest and most meritorious ones of all, were grown entirely out-of-doors, without any protection whatever except a canvas covering during a few frosty nights.

The best twelve Japanese were: J. D. Childs, Mad. Lucraux, Fulton, *Striata perfecta*, F. Delaux, Blanchee Neige, Soleil Levant, President Arthur, Mad. Moynet, *Gloriosum*, Mrs. Brett, Dan. Allen. The best six Japanese of one variety were Mrs. Brett. The best twelve Chinese were Jardin des Plantes, Cambridge, Mabel Ward, Mrs. M. Morgan, Prince Alfred, Empress of India, Lady St. Clair, Lord Wolseley, Duchess of Connaught, B. Finlay, Fingal, Golden Empress. Six flowers of the latter were the best six of one variety. Among the Anemone-flowered were some of the most perfect flowers on exhibition; the prize collection of twelve consisted of: Mad. Cabral, Gluck, Margaret d'Anjou, Lady Margaret, Timbale d'argent, Mad. Theresa Closs, Fabius de Medina, Fair Margaret, Acquisition, Sœur de Seville, George Sands, and the Manhattan.

Of new seedlings there was a large array, some of them distinct enough to find a permanent place on the lists, but when it is considered that nearly 700 varieties were here exhibited, distinct novelties must naturally become scarce in time.

By far the largest exhibitors were Hallock & Thorpe, to whom were awarded nearly all the first prizes in the professional class. Among other prominent exhibitors were Siebrecht & Wadley, John Lewis Childs and Walter Coles.

The extent and excellence of the amateur exhibits was one of the most noteworthy features of the "Show." The principal exhibitors and prize takers in this class were: Rich. Brett, gardener to J. R. Pitcher, Short Hills, N. J.; John Farrell, gardener to Wm. Barr, Orange, N. J.; Geo. Matthews, gardener to J. M. Sugden, Great Neck, L. I.; John Cullen, E. M. Allen, John Dallas, Mrs. T. Schuster, L. Lord, Jr., G. O. Rawson, and others whose names we did not learn.

AMERICAN INSTITUTE.

This exhibition, held from Nov. 17th to 21st, was, naturally, in many respects a repetition of the above, as the principal exhibitors were the same on both occasions; in the general arrangement and disposition of the exhibits, however, it was decidedly superior. The large, well-lighted hall admitted of showing everything to better advantage, and the various classes could be kept well separated, which facilitates the work of the judges considerably. The number of new seedlings exhibited was large; Annie Brett, Mrs. J. Thorpe, Jennie Murkland, Bronze Shield, and others, being especially noteworthy.

Designs of cut flowers, as is usual at these exhibitions, were well represented, and most of them were tasteful and pleasing. Baskets, vases, jardiniers, etc., were filled and gracefully arranged with Chrysanthemums in combination with Feathery Asparagus and various autumn-tinted leaves.

THE BOSTON CHRYSANTHEMUM SHOW.

Special Correspondence of The American Garden.

The Annual Exhibition of Chrysanthemums by the Massachusetts Horticultural Society on the 12th and 13th of November, was in many respects the most successful ever given in Boston, and that is saying a great deal, as these Exhibitions have taken place for years, and do not depend upon a mere fanciful craze among society people for their popularity or completeness. The horticultural taste in Boston is too deep and sincere to be eddied here and there by the whims of fashion, and that is the reason for the unvarying progress and popularity of the Boston Flower Shows. Over ten thousand people attended this Exhibition, and had it been kept open another day, not less than fifteen thousand would have attended. Some of the principal growers did not exhibit, owing to various vicissitudes, among them Marshall P. Wilder and C. M. Atkinson. Last year the latter showed some of the most remarkable specimens of single-stem Chrysanthemums ever shown in this country, and it was regretted that he could not compete this year.

The upper hall of the society, comprising 5,000 square feet, was devoted to Chrysanthemums in pots and the Orchid display, while the lower hall was given over to cut blooms, and fruit and vegetables. Even both of these large halls were inadequate to hold the various collections. The first prize for the six Chinese Chrysanthemums, was taken by Dr. H. P. Walcott of Cambridge, with the following varieties: Mrs. Forsyth, Bruce Finlay, Baron Buest, King of Crimsons, Mrs. Sharp and Mrs. Shipman. These were magnificent plants in 12-inch pots, grown naturally, the blooms not tied down, each plant between four and five feet high and averaging five feet across. The same may be said of all this grower's plants, who offered some thirty specimens, which were admitted to be the best grown plants ever shown in one lot in this country.

Dr. Walcott was also first for three Chinese: Mrs. Dixon, Christine and Alfred Salter. He was also first for six Japanese with glorious plants of La Charmeuse, Flambeaux, Nevada, Bouquet Fait, Golden Dragon and President Parkman. For three Japanese, Dr. Walcott came first with Fair Maid of Guernsey, Moussillac and Belle Valantinan.

For four Pompons, Dr. Walcott was first with Salomon, La Vogne, Molle Marthe and Golden Mdlle Marthe. The specimen Chinese Chrysanthemum, Gladstone, offered by Dr. Walcott, took the first prize, and the latter took first prize for specimen Japanese Chrysanthemum with Fernand Feral. Dr. Walcott's only competitor in these classes was a new grower, Mr. Edwin Fewkes of Newton, whose plants while smaller, were yet well grown and very clean and perfectly flowered. He took all the second prizes for specimens.

The first prize for forty specimens, not less than ten varieties, was awarded to E. W. Wood, who showed handsome plants of the following: Anais, Bouquet Fait, Citronella, Daimio, Dr. Sharpe, Elaine, Fremy, Fair Maid of Guernsey, Golden Circle, Golden Geo. Glenny, Golden Dragon, Gray's Golden, Beverly, Mabel Ward, Jno. Salter, Madame B. Rendatler, M. Planchinan, Mrs. Geo. Glenny, Mrs. Geo. Rundle, Prince Alfred, Prince of Wales, Semiramis, Snowball, Souvenir de Mercedes, Seur Melanie, Temple of Solomon and White Eve.

Edwin Fewkes was second in this class and Patrick Malley third.

The display of cut blooms was very large, and hundreds of seedlings were shown. It is evident that while the tendency to grow these is laudable and should be encouraged, that on the other hand there is a tendency to flood the field with varieties which are not distinct or remarkable; many named kinds have been placed in commerce, which a year hence will be thrown aside by growers as worthless. Standing out in marked distinction with the average run of seedlings, was

A magnificent, white, reflexed flower shown by Dr. Walcott. This, which was labeled C. 10., was considered the finest white seedling ever shown in Boston or anywhere else. It is a perfectly-shaped, globular flower, with firm, strap-shaped petals of such pure color that Elaine looks dusky beside it. The petals reflex in such a way that the flower appears to be globular and the center is filled to perfection. The specimen on exhibition measured over four inches across. It was awarded a first-class certificate of merit and was stolen on the last night of the Exhibition by some one who no doubt hoped to propagate it from the stem. Dr. Walcott showed blooms of other fine seedlings, notably a yellow and a pink Japanese flower, both very large and promising. A silver medal was awarded Dr. Walcott for an immense plant of his seedling B. 25. This is a small reflexed flower of vigorous habit but whose chief charm is its intense dark yellow color. It is quite distinct in this respect and will prove a valuable acquisition. Other fine seedlings of Dr. Walcott's, viz: Geo. Walcott, lilac striped; Colorado Yellow and Algonquin Yellow were shown and generally admired.

Mr. Fewkes exhibited a group of seedlings, all of good form and color. A large group of seedlings was shown by Patten & Co. of Salem, most of them inclining to be open-eyed, but noticeable for the varying forms and colors which were pleasing. J. Lewis Childs showed a good group of cut blooms and E. M. Allen exhibited a bronze yellow seedling called Brazen Shield.

In the competition for cut blooms Edwin Fewkes was first with twelve blooms of Chinese Chrysanthemums. This was a very perfect lot and were named Isabella Bott, Rival Little Harry, Princess Teck, Barbara, Hereward, Eve, Mr. Corbay, Mabel Ward, St. Patrick, Nil desperandum, Lady Hanc and Mr. Bunn. He was also first for six blooms of Chinese, as follows: Lord Wolseley, Guernsey Nugget, Pietro Diaz, Princess of Wales, Mrs. Forsyth, General Slade.

E. Shepard of Lowell showed twelve cut blooms of Japanese Chrysanthemums, and took the first prize in this class. The first prize for twenty-four sprigs of Japanese blooms went to Edwin Fewkes for unexampled specimens of Souvenir de Haarlem, Carmen, Gloire de Toulouse, Album plenum, La Frizure, Daimio, Fulton, President Parkman, Ben d'Or, Beauté de Toulouse, Source d'Or, Bouquet Fait, Dr. Mushers, L'Incomparable, Baron de Prailly, Moonlight, Flambeau, Oracle, Bouce d'Or, Aurore Boreale, Mme. C. Audiguer, M. Paul Fabre, Gloire Rayonnante, Margot.

Mr. Fewkes took first for twenty-four sprays of Chinese, as follows: Faust, Jardin des Plantes, Princess Teck, Talford Salter, Souvenir Mercedes, President Sanderson, General Slade, Garden Queen, Antoinette, Isabella Bott, Hero of Stoke Newington, Cherub, Hereward, Mr. Bunn, Barbara, Venus, Mr. Corbay, Eve, Jeanne d'Arc, Mrs. Forsythe, Rival Little Harry, Mrs. Dixon, Mr. George Glenny, Mabel Ward. Mr. Fewkes was first for six blooms of Japanese: Baron de Prailly, Soleil Levant, J. Delaux, Belle Paule, Chinoiseire, Mrs. C. Cary.

As is always the case the display of Orchids was large, and crowds surrounded the stage, which was filled with splendid specimens. Fred L. Ames took first prize for three Orchids, showing *Cypripedium insigne Maulei*, with some eighteen flowers: *Odontoglossum Alexandrae* and *Vanda Sanderiana*, the latter having a spike of seven highly-colored flowers. E. W. Gilmore was second with *Oncidium Ornithorynchum*, three feet across, *Odontoglossum grande* and a fine specimen of *Saccolabium Blumei majus*. The third prize for three Orchids was won by F. L. Ames with *Vanda cærulea*, *Phalænopsis amabilis* and *Cypripedium Opicinianum*, the latter with about fifteen flowers open. E. W. Gilmore was fourth with *Dendrobium formosum giganteum*, *Oncidium variosum* and the *Lycaste Skinneri*.

David Allan took the first prize for a specimen Orchid with *Vanda cærulea*, the blue-flowered *Vanda* bearing two fine spikes. F. L. Ames was second with a glorious specimen of *Cypripedium Harrisonianum*. W. A. Manda of the Cambridge Botanic Garden had a fine lot of Orchids and rare greenhouse and hardy plants. Mr. Ames exhibited for the first time *C. tessalatum porphyreum*, a fine hybrid, and *C. Tonson*, a species. Both are striking Orchids and received a certificate of merit. There were many other rare Orchids on the stage, the whole producing a floral *tout ensemble*, which cannot easily be described. There were brilliant collections of cut flowers from many other exhibitors which in this limited report cannot well be alluded to in detail.

The fruit display was large and especially good as to Pears. Among the latter were Angoulemes, Anjous, Langeliers, Lawrences, Vicars and Winter Nelises. J. P. Knight exhibited Japanese Pears and two seedlings from the same. One of the latter was remarkably beautiful. A dish of *Psidium* (Guava), which is rarely seen, was shown by Mrs. F. B. Hayes.

The society has just appropriated $5,800 for prizes for the year 1886, and its exhibitions for that year are likely to be larger than ever. A not unlikely probability is, that within a year the society will secure a lot of land on the Back Bay district and erect a light building for large exhibitions, having from ten to fifteen thousand square feet all on one level. When it is stated that the yearly receipts of the society for admissions to its four great exhibitions have grown from about $600 in 1882 to over $3,600 in 1885, the necessity for increased accommodations will be appreciated. B.

Gardening is the most beautiful, the most healthful and most enjoyable employment for man or woman, for youth or old age.

SUB ROSA.

Now don't you think, just between ourselves, that it is all hypocritical nonsense for after dinner speakers and dilettante writers to be so constantly praising us soil and plant workers as chief among all toilers with hands, and landing our occupation to the skies as noble and grand? Have you noticed that most of those folks who talk so grandiloquently about cultivators of the soil very rarely are farmers or gardeners themselves? They think it all very nice for other folks—but not for themselves. Some old philosopher said we should mistrust the motives of flatterers, and we guess it is true today. Honest praise is scarce. The world thinks we need none for doing our duty quietly, though it often helps a weary worker wonderfully.

* * * *

Another sort of talk that does little good is the carping criticism of every new thing and new method. We will tell you, confidentially, that we think it mighty poor policy for editors to deride new varieties of fruits and garden plants, simply on their own experience. "This is a big country," and a thing may be good in New York and worthless in Georgia. It caters to the lower feelings of men to be forever trying to prove a merchant a cheat and fraud because a few seeds or plants are not just what was expected. Mistakes happen to everybody. The most successful men—business men, statesmen, philosophers—are those who have confidence in their fellows until they prove themselves unworthy of confidence.

* * * *

Gentle Flora is holding high carnival in America as never before. The ranks of her devotees are swelling apace. Fashion bows low at Flora's nod, and wears her favors as rarest finery. No feast or fête is of any moment without freest decoration of flowers and rare plants. The exhibitions of the beautiful products of garden and greenhouse were never so large or so fully attended as this year. The fair Chrysanthemum alone now claims admiration for more than half a thousand varieties. Flora is lavish with her gifts to the poor and the rich alike. But poor folk get these delights by their own willing labors, while the rich are paying princely prices for the rare and costly beauties. The gentle goddess demands close and loving service, and she is now receiving it unstintingly from dames and maidens and stalwart men. Her gracious rule is spreading through the homes of the land, through the halls of fashion and the salons of art. May her banners wave at every window, and on every lawn, and her banner bearers be all who are fair or true.

* * * *

Fair Pomona, too, is rejoicing in the rapid extension of her kingdom over the gardens and farms of the land. There are many indications that fruit culture is making rapid strides as an industry in all parts of the country. Men of brains and experience and desire for progress are forming themselves into associations for the promotion of their work, and the old societies were never more useful than now. The recent exhibitions have been remarkably complete and useful. New varieties of great merit are being constantly introduced which will increase the returns of cultivation. This year has seen marked progress in varieties and methods, and general enlightenment on the importance and possibilities of horticulture. The fruit growers and gardener occupy foremost places among the industries of the soil, and are determined to keep there if organization and the spread of knowledge can accomplish the object.

* * * *

Horticultural journals which claim to be "the only paper of its kind published" are expected of course to be exceptionally original in their various features. But isn't the claim rather far-fetched, dear friends, when you copy department headings, manner of arrangement, and the new features of THE AMERICAN GARDEN as fast as they appear? We don't object to your doing this, for we work for the good of horticulture, and if you can work any more effectively on our plans and methods, you are welcome to do so, but wouldn't it be more modest to claim less of pure originality?

* * * *

Women gardeners were hard to find only a little while ago, but as we search for them diligently they come forward in ever increasing numbers, yet with the innate modesty of their sex, a charming trait that work in the art-beautiful administers to and cultivates. We mean of course the women who engage in gardening as a business, and the number is all too few. No employment is better fitted for woman than this, and none can more appeal to her love of the beautiful; none is better adapted to her strength; none is more in accord with her natural abilities; none is better for her health. We now have in hand several examples of remarkable successes of women in horticulture, which we promise to give our readers in due time. But please remember that this is sub rosa, and don't say anything about it!

* * * *

Do you know of any better work in the world than the promotion of the culture of fine fruit, healthful vegetables and beautiful flowers? If you do, please tell us what it is, for we want to engage in that work. But if you love gardening or fruit culture in any form, why not seek to interest your friends in the pleasant employment for leisure hours, if not as an industry? And if you do this, how can you do it better or more effectively than by inducing them to read horticultural books and periodicals? Surely the paper or magazine you read has done you much good, if only in keeping you informed on the progress of the art you love. The man or woman who does not so read has much to learn about the methods of work as well as of what others are doing, and to him or her the periodical may be of most use in helping to properly direct their efforts either for pleasure, health or profit. Isn't this good sense? and won't you act upon the suggestion to-day and to-morrow, but especially to-day among your neighbors?

* * * *

Surprised was the worthy editor of *Vick's Magazine* at our caption of "$500 to $1,000 profit" on an acre of land. Why "surprised?" Any horticultural editor who has travelled among the class he aspires to lead and instruct should know of many instances of these large profits. We do. If Mr. Seelye will read our October and November and following issues carefully he will see definite and accurate records of these large profits. Of course we don't pretend that every gardener makes such profits. O no. More's the pity. We don't make them yet but are trying to. We claim that some skillful cultivators do achieve such results, and that many more can if they *try rightly*, and we shall help our readers to this desirable end of large profits.

* * * *

Try new things. "Prove all things and choose that which is good"—to the extent of your means and ability, but don't be humbugged with the pretended "novelties" of unreliable parties. Fortunately, most of the leading seedsmen, florists and nurserymen now exercise extreme care in the introduction of new varieties. The reliable nurserymen, under the lead of the American Pomological Society, have had excellent success in this direction, and the best seedsmen are doing the same. There will be surprise and consternation among some pretended seedsmen when they see certain catalogues this year, at the way in which some of the claimed "novelties" are shown up by giving their true names. May the good work of giving rightful names prosper greatly.

* * * *

Apples are so plenty in Western Massachusetts that on a recent drive in Franklin county we saw hundreds of bushels of fine fruit going to waste in many orchards for want of interested hands to garner them. This is rank injustice to the Apples, for, with prices at $2.25 to $5.00 a barrel in England, there is no necessity for such wastefulness. There is demand enough for them, if their owners would stir themselves to find it. Such men don't deserve good fruit. If the market is far off and difficult to reach, there is no good reason why the fruit may not be turned into cider and vinegar through a cider mill or vinegar factory. No such establishment exists in the vicinity we write of, but one might find profitable employment there in nearly every year.

* * * *

Oh! A youthful contemporary, which is very bright and interesting, says: "You can rarely *buy* as good Tomato seeds as you can save at home." * * * We believe in saving seeds at home. We even grow a few varieties of seeds for sale to seedsmen, because we have learned how by years of dearly bought experience. But we *buy all* other seeds than these few sorts of men whom we believe know how to grow them better than we can. And we *always* buy the highest priced seeds, *never* the cheap ones. The best of everything is none too good. We would as soon think of trying to raise our fruit trees, as of saving seed for our own use. Every man to his trade.

MORE LARGE PROFITS.

How $1,492.32 net profits per acre were made

BY THEO. F. BAKER.

President N. J. State Horticultural Society.

Noticing that the correctness of the statement of THE AMERICAN GARDEN that from $500 to $1,000 profit per acre could be made in gardening, has been questioned by certain parties, I wish to endorse the "GARDEN'S" statement most emphatically, and am ready to furnish convincing proof thereof. Such profits are, of course, not claimed, nor can they be produced, from every acre of a large farm; market gardeners do not generally measure their gardens by the hundred acres; but cultivate their choicest lands in small plats according to the demands of the markets. With judicious management, application of the proper elements for plant food, and thorough cultivation with hands and brains, market gardening can and does produce crops that will net a profit of even more than the sums named by THE AMERICAN GARDEN, as will be seen by the account below of the expenses and receipts from one-eighth acre cultivated this year.

Cr.—*First Crop.*		
4163 bun. of Onions at 3c per bun.	$124.89	
2298 head Lettuce at 4c per head	91.92	
578 " " " 3c "	17.37	
82 " " " 2c "	1.64	
		$235.82
Second Crop.		
15 baskets of Cauliflower at $1	$15.00	
50 head at 10c per head	5.00	
		$20.00
41 bsk. Peppers at 35c per bsk.	$14.35	
14½ " " 30c "	4.35	
		$18.70
Total proceeds		$274.52
Dr.		
To fall plowing and harrowing, 1884	$ 1.00	
" 12 loads manure at $2	24.00	
" spreading	1.00	
" spring plowing and harrowing	1.00	
" 400 lbs fertilizer	10.00	
" sowing "	.25	
" 4 bu. Onion sets at $2.50	10.00	
" setting Onions and Lettuce	3.00	
" 4500 Lettuce plants	4.50	
" Cauliflower plants	2.50	
" Pepper "	1.25	
" preparing and marketing Onions $2.50 per 1000 bunches	10.40	
" preparing and marketing Lettuce $1.00 per 1000	2.95	
" cultivating with wheel hoe 15c per hour	3.00	
" plowing and harrowing second crop	1.00	
" setting Peppers and Cauliflower	1.50	
" hand hoeing	1.50	
" cultivating with horse	3.00	
" marketing second crop	5.00	
" interest on land	1.13	
Total expenses		$87.98
Net profit from 1-8 acre		$186.54
Rate of profit per acre		$1492.32

The ground has been under cultivation with Onions and Lettuce as a first or early crop for the last ten years in succession, and always followed by a second crop, varying as much as possible in its habit of growth and demand in plant food from the first crops. As good crops are now grown as when first cultivated, and the soil has become deep and rich.

The plat was plowed in November, 1884, and the manure applied spread evenly over the plowed surface. In the spring, March 31, plowed again turning under the manure and 400 pounds of Mapes Potato Fertilizer, applied broadcast and harrowed in with an Acme harrow, then Onion sets were planted on part, and Lettuce to finish the plot. After these crops were gathered and the ground cleared, July 2d, it was again plowed and harrowed and Cauliflower and Peppers planted two feet, six inches apart each way, without any manure or fertilizer.

The Onions were pulled while green and sold with tops on—six in a bunch. All the produce was sold wholesale in the market.

The yield of some of the crops was considerably reduced by a severe drought which proved especially disastrous to the second plantings. Over one-half of the Pepper and Cauliflower plants were lost after planting, being burnt in the hot, dry soil, during the week when the thermometer registered from 96° to 100° every day. Otherwise the returns would have been still better, but as this record is simply intended to show what can be done in ordinary seasons and for a series of years, it may serve the purpose as well.

I may add that the figures here given are not mere guess work, but that I keep a day book,—and have done so for years,—in which each day's sales, expenditures, and operations are noted as they occur. By this means I can sum up my accounts at any time and ascertain the profit or loss of any crop. This habit of keeping accurate accounts—acquired in former mercantile occupation—has been of great help and advantage to me; it should form part of every farmer's and gardener's work, and, if conscientiously adhered to, would bring encouragement and profits to many a disconsolate tiller of the soil who does not know how to make ends meet. THEO. F. BAKER.

Bridgeton, N. J.

Answers to Correspondents.

Spreading Manure in Winter.—*L. M., Elyria, O.*—Fresh manure may be spread on the frozen ground with very little risk of loss, yet most gardeners prefer to compost manures, spread in spring, and plow under at once.

Pansies.—*Rockland.*—Pansies are nearly hardy in this latitude, but to insure their surviving severe winters, they should be covered similarly to the method advised for Strawberries. Where a cold-frame can be placed over them, flowers may be had nearly all winter.

Floral Designs.—*Mrs. C. H. W., Hinsdale, N. H.*—Fashions in designs, and styles of arranging flowers are about as capricious as fashions in millinery goods. Natural good taste is of more importance in arranging flowers than formal directions. The "Flower Fashion" articles in THE AMERICAN GARDEN give the fullest and most complete record of the flower styles in vogue in New York, to be found anywhere.

Potting Bulbs.—*N. T. L., Astoria, N. Y.*—Large bulbs growing in a greenhouse in winter do fully as well when one-third or one-half of the upper part is above the surface of the soil, as when entirely under ground. Bulbs potted in the fall, and not desired to bloom before spring, keep excellently in a cool cellar. They should be covered with sand or leaves, but if the cellar is warm, the bulbs are apt to start into growth before wanted, in which case a cold-frame is preferable.

THE VACATION FORCE IN APPLES.—"My little boy," said a gentleman, "you ought not to eat those green Apples. They are not good for little boys."

"They hain't, eh?" the boy replied with his mouth full. "Guess you don't know much about 'em, Mister. Three of these Apples 'll keep me out of school for a week."—*N. Y. Times.*

NOVELTIES.

Under this heading we propose to notice all new varieties of Fruits, Vegetables, Flowers, and Ornamental Shrubs and Trees introduced by reliable houses here and abroad. We wish to have it distinctly understood, however, that the fact of a novelty being mentioned here does not imply our endorsement or recommendation of the same, the descriptions being mostly those of the originators or introducers. This column is intended merely to serve as a record of the novelties of the day.

FRUITS.

Pear.—"Mahoning," M. Milton, Youngstown, O. Resembles Fred Clapp, but is much larger and better flavored. A thrifty grower.

Apple.—"Thompson," also "Hurst." Hybrid Crabs originated by Geo. P. Peffer, Powaukee, Wis. Very desirable for the Northwestern States and Canada.

Strawberry.—"Needle's Seedling," originated in Iowa; similar to Wilson, but earlier and more uniform in size.

Grape.—"Marsala," originated in Missouri, and described by Sam. Miller as, bunch large, berry large, dark red, somewhat pulpy, with little native aroma but pleasant to eat; free from rot.

VEGETABLES.

Tomato.—"Livingston's Beauty." A. W. Livingston's Sons, Columbus, O. Claimed to be superior to any of the originator's former introductions.

Salsify.—"Mammoth Sandwich Island," Jas. M. Thorburn & Co., New York. Enormous size, resembling a good-sized Parsnip.

Potato.—"The Thorburn," Jas. M. Thorburn & Co., New York. Earlier and more productive than the Beauty of Hebron of which it is a self-seedling.

FLOWERS.

Phlox Drummondii grandiflora stellata splendens.—E. Benary, Erfurt, Germany. Flowers vivid crimson, with a clearly defined white star in the center.

Kniphofia Leichtlini.—A new species from Abyssinia. A dwarf grower, bears a dense spike of yellow flowers, some four inches in length. Hardy at Kew.

Nelumbium speciosum album, or White Lotus. From Japan; flowers nine to ten inches in diameter and of ivory whiteness.

Iris Korolkowi from Asia. Not entirely new to botanists, but new in cultivation; described as in some respects the most beautiful of all Irises; of soft, creamy ground color with rich, dark purple-brown throat.

Vallota purpurea magnifica.—New Plant and Bulb Co., Colchester, England. Plant considerably stronger than the ordinary kind, flowers larger, of bright, clear scarlet, while the interior of the tube is white.

Eucharis Mastersi.—W. Bull, Chelsea, England. A newly-introduced species, flowers snowy white, produced in clusters from five to nine on each stem, very floriferous.

The following plants received first-class certificates of the Royal Horticultural Society of England: *Cattleya autumnalis*, J. Veitch & Son; *Calanthe Cooksoni*, Norman Cookson, Wylam-on-Tyne; *Sarracenia Buchanani*, B. S. Williams, Upper Holloway; *Calanthe Alexanderi*, Norman Cookson; *Nepenthes excelsior*, B. S. Williams; *Chrysanthemum Val d'Andorre*, Mr. Wright, Middle Temple Gardens; *Cymbidium elegans*, B. S. Williams.

ORNAMENTAL TREES.

Evergreens.—*Abies lasiocarpa, Donnetti, Remoati, excelsa aurea; Thujopsis nana compacta*, J. Butterton, Hammonton, N. J. All of them beautiful and desirable trees for ornamental planting; hardy.

Our friend Mr. C. V. Mapes has a bright boy fond of flowers, to whom he carried home a package of fertilizer for the boy's plants. On their way to the garden, the boy, with the parcel under his arm, said, as its perfume greeted his senses,

"Papa, I wonder why the lovely flowers like this nasty stuff!"

Of course, the fond papa then read the boy a lesson on the odd taste of the flowers for that particular brand!

METROPOLITAN MARKETS.

IN BRIEF PARAGRAPHS FOR THOSE COMMERCIALLY INCLINED.

A review of the month previous to November 15th.

FRUITS.

Apples.—King Apples have brought the best price until the last week, when Spitzenburgs have taken the lead, and are selling for from $2.25 to $3 a bbl. Kings are $2.50 a bbl; Nonesuch are also $2.50, Greenings cost from $2 to $2.50 and Baldpins $1.25 to $2. Lady Apples have put in an appearance, bringing 20 cts a qt and from $4 to $3.50 a bbl. Table Apples retail for 30 to 50 cts a doz.

Bananas.—Red Bananas cost $1.25 a bunch and the yellow ones, which are usually lower in price than red ones, are $1.50 a bunch, for a prime article. They cost 30 to 50 cts a doz retail.

Barberries are 50 cts ½ pk.

Cocoanuts cost $4.50 per 100; 10 cts each, retail.

Cranberries are 10 to 15 cts a qt; $6 to $8 a bbl.

Grapes.—Malagas vary so in quality that bbls of 70 to 90 lbs cost $3 to $7. They cost 20 to 35 cts a lb. Black Hamburgs are 75 cts to $2 a lb, according to quality and the locality where purchased. All fruits bought on Broadway bring 25 per cent more. Niagara Grapes bring 75 cts per 5-lb baskets; Delawares are 60 cts for 5 lbs; Catawbas, 50 cts for 5 lbs; Tokays $1.50 for 5 lbs. Concords 8 cts a pound.

Lemons.—Sorrento Lemons are just out of market. Messinas bring $5 and $6 a box. Malagas $2 a box. At retail Lemons range from 20 to 30c doz.

Oranges.—Florida Oranges appeared the last week in October, but have been very poor and sour until within a few days, when an invoice arrived much improved in quality. They cost $2.50 to $2.75 a box. Jamaicas cost $7 to $3 a bbl. Messina Oranges are about done. A few Florida blood Oranges bring $1 a doz in Broadway fruiteries. The retail price of Oranges is from 40 to 60 cts a doz.

Peaches.—A late variety of California Peaches called "Billeuius" were in market from October 20 to November 3. They were a flesh color with very rosy cheeks. They cost $4 a box of 75, and sold for fancy prices on Broadway. There are a few Peaches from cold houses on the Hudson river bringing $1 and $1.50 a doz.

Pineapples.—There is a limited supply of Havana Pineapples at 40 cts each, and a few Porto Ricos 25 cts each. The introduction of fresh Pineapples into mince-pie recipes keeps up a moderate demand for them.

Persimmons are 20 cts a qt.

Pomegranates cost $4 a case of 100; or 5 and 10 cts each at retail.

Pears.—Seckels are 50 cts a qt in fruit stores. Virgalieres are 30 and 40 cts doz. Bosc are 50 cts a doz. Sheldons 40 cts doz. Duchess 50 cts a doz.

Quinces.—Only a few large, sound ones are seen; $1.50 bush. Inferior Quinces are 75 cts a basket.

Tamarinds are 15 cts a lb.

Wintergreen Berries sell at 20 cts a qt.

VEGETABLES.

Artichokes.—French Artichokes are 30 cts each; Jerusalem Artichokes 35 cts a qt.

Beans.—Lima Beans have deteriorated in quality, and are scarce. They are sold in the pod for 10 cents a small measure, or shelled for 20 cts a qt. String Beans from Florida are 60 cts ½ pk. Long Island String and Butter Beans are scarce at $3 a bag, 25 cts a small measure.

Brussel's Sprouts bring $4 a basket, 30 cts a qt.

Beets are 30 cts doz bunches, 5 cts a bunch.

Celery costs $1.25 a doz bunches and 12 and 15 cts a bunch.

Corn.—Green Corn still lingers, but is not excellent; from 25 cts it is now 35 cts a doz ears.

Cauliflowers are plentiful and cheap at 75 cts to $2 a bbl, and are 15 to 30 cts each.

Carrots are 20 cts ½ pk, and $1.50 a bbl.

Cucumbers.—Hot-house Cucumbers are in market, costing 40 cts each.

Chervil from the hot-house is 10 cts a bunch.

Cresses are now sold by the qt. As they are from beds protected, they cost 20 cts per qt. When gathered from brook-sides in mild weather they are sold in small bunches.

Cabbages bring from $1 to $1.50 doz, and 10 and 15 cts each.

Dandelions are 10 cts a qt.

Eschallots are 40 cts a qt.

Egg Plants have been plentiful and cheap, but are about disappearing. Small ones are 15 cts each.

Fetticus is 10 cts a qt.

Lettuce is very fine; the choicest is 5 cts a bunch, and ordinary quality brings 50 cts a doz, 3 heads for 10 cts.

Mushrooms.—A glut of field Mushrooms came the last of October; they sold from 15 cts to 25 cts a qt; after a week of this, the supply fell off and prices went up to 50 cts a qt. There are now no field Mushrooms in market. Cultivated ones cost $1.50 a lb.

Mint is 5 cts a bunch.

Okra.—Green Okra from the Bermudas is $1 per 100. Dried Okra brings $1 a lb.

Oyster Plant is $1.25 and $1.50 per doz bunches, and 20 and 22 cts a bunch.

Onions.—Spanish Onions in 00-lb crates cost $1.50; 5 to 10 cts a lb at retail. Some from Valencia are extra large and mild; 7 cts a lb. Silver-skinned bring $4 to $6 a bbl; 60 cts ½ pk. Red Onions are $2.50 bbl; 30 cts ½ pk.

Potatoes.—About half the crop of Western Potatoes have dry rot. Fine ones bring $2.25 a bbl. Very few arrive from New Jersey and these sell for $1.50 and $1.75 a bbl. Long Islands cost $2.25 a bbl; Nova Scotia, just arrived and considered the best, are $2.50 a bbl.

Sweet Potatoes.—"The Nancy Marm" from Virginia rank Delawares and are $2.50 bbl. There was a glut the first of the month, when they sold for $2 bbl and 20 cts ½ pk. They bring now 30 and 35 cts ½ pk. retail.

Parsnips cost 20 cts doz, and $3 a bbl.

Peas.—New green Peas from Florida cost $1 a pk retail. Long Island are poor and 30 cts ½ pk.

Peppers.—Spanish Peppers cost 10 cts a lb.

Radishes are 5 cts a bunch.

Squash.—Hubbard Squashes are 10 and 20 cts each.

Turnips cost $1.50 bbl and 20 cts ½ pk.

FLOWERS.

Asparagus vine costs $1 a spray or garland. At retail, $1.50.

Carnations cost $1 per 100 for all excepting fancy varieties, which bring $2 per 100. The latter retail for 5 cts each.

Chrysanthemums cost 25 cts a bunch, wholesale, and sell for 30 cts a bunch. So little profit is made by retailers on this flower that they consider it time thrown away in handling them. Blooming plants bring from 30 cts to $3.

Daphne costs 10 cts a spray, wholesale, and 15 cts retail.

Forget-me-not is 25 cts a doz sprays. It brings 5 cts a spray, retail.

Hyacinth (Roman) is $10 per 100 and 15 cts a spray, retail.

Heliotrope costs 25 cts a doz sprays and retails for 35 cts a doz.

Jasmine costs 25 cts a bunch of one doz sprays. Three sprays are sold for 10 cts, retail.

Lilac costs $3 a plant, cut or on the bush. Fancy prices are charged at retail.

Lily of the Valley is $8.00 per 100. It is 15 cts a spray, retail.

Mignonette cost 25 cts a doz, wholesale; 4 sprays bring 10 cts, retail.

Roses.—Perle des Jardins are $5 per 100, as are Niphetos, and Souvenir d'ren Ami. Tea Roses cost $2 per 100. A few Jacqueminots straggle in, blossoms forced on old wood; these bring $20 per 100. The American Beauty Rose sells for from 15 to 25 cts each, retail. Coruelia Cooks cost $10 per 100. Bennett Roses bring $8 per 100. La France Roses are $18 per 100. Mermots are $5 per 100. As a rule from 25 to 50 per cent is made by retailers of Roses; but it is difficult to give correct quotations of retail prices, as these are never standard.

Smilax is 25 cts a string, retailing for 30 cts.

Violets cost from $1 to $2 per 100. They retail for from $1.50 to $2.50 per 100.

Trade Notes.

ITEMS OF GENERAL INTEREST FROM THE SEED, NURSERY AND FLOWER TRADES ARE SOLICITED.

It is currently stated that the seed crops of Wrinkled Peas and of Beans and Onions are quite short.

A. J. Caywood & Sons, Marlboro, N. Y., have had a good trade this year. Their new varieties of Grapes and the Raspberry take well.

Mrs. E. L. Grant Campbell, the energetic woman florist of Cleveland, is arranging to add a wholesale branch for florists' supplies to her growing business.

Hovey & Co., 10 So. Market St., Boston, have *not* sold out to anybody, but keep up the old established business and have a large proportion of the very cream of the seed trade at their old stand.

E. Hippard, Youngstown, O., finds THE AMERICAN GARDEN so good an advertising medium that though he starts in for a series of advertisements, yet his stocks are not equal to the demand and he has to stop almost as soon as he begins.

A correspondent informs us that it was our old friend C. M. Hovey who first cultivated, exhibited and sold the Monarch Rhubarb in this country more than ten years ago, and was awarded the first prize by the Massachusetts Horticultural Society for its size and excellence over all others.

From present appearances the horticultural trades will seek to push their business the coming season by even more vigorous newspaper advertising than last year. One seedsman we know of, who decreased the size of his advertisements last year and spent less money than before, yet increased his business, will begin the next season early with large advertisements in only the best papers and magazines.

Hard times seem to have met nurserymen and florists during the year, but so far we have heard of very few business failures among them. Now affairs are looking brighter for them. Stocks are in good condition, and trade for the winter and spring promises to be fully up to the average of previous seasons, and in some lines much greater.

The nurserymen and seedsmen who are known for reliability, and who have acquired stocks of the best of the standard varieties which have been thoroughly tested, appear to be in fully as prosperous condition as those who spend much of their strength on so-called "novelties" that are little known. It is an interesting fact that the largest seed house in the world, the Vilmorins of Paris, refuse to offer a variety for sale until they have thoroughly tested it on their own grounds. The average quality of their seeds, too, is apparently not exceeded by those of any house in the trade.

SOME COMPETITORS

FOR THE AMERICAN GARDEN PRIZES.

The competitors entered to date for THE AMERICAN GARDEN Prizes are the following:

(1) *Grape.*—Name not given, by D. S. Marvin of Watertown, N. Y.

(2) *Strawberry.*—Jewell, by P. M. Augur of Middlefield, Conn.

Parker Earle, by Jno. T. Lovett of Little Silver, N. J.

No. 5 seedling, by J. G. Bubach of Princeton, Ill.

Seedling, by J. A. Foote, Terre Haute, Ind.

"Itasca," seedling from the Manchester fertilizer with Jersey Queen. By J. H. Haynes, Delphi, Ind.

(3) *For the best new Vegetable.*—Pea, a cross between Prince of Wales (female) and Poisnain vert de St. Michael of Vilmorin, by E. S. Carman of River Edge, N. J.

Seedling. By M. A. Barber, Perry Center, N. Y.

(4) *Gooseberry,* "Triumph." By George Achelis, West Chester, Pa.

(3) *Raspberry.*—Name not given, a white cap, by D. S. Marvin of Watertown, N. Y.

"Earhart," black-cap, produced three full crops a year. By G. H. & J. H. Hale, So. Glastonbury, Ct.

(6) *For best New Fruit,* Red Huckleberry. By J. M. Ogle, Puyallup, Wash. Ter.

SAVORS OF THE SOIL.

HOOKED, HARROWED AND HARVESTED.

Jack Frost always goes cross-lots.

The best farm is the one that is best tilled.

Piety iz like Beans, it seems to do the best on poor sile.

There is lots of folks who can't let bad enough alone.

Every dime's worth of paint saves a dollar's worth of wood.

Show me a tidy farm and I'll show you a successful farmer.

'Stead of praying for rain, why don't the parson ask for a full crop in the barns?

Contentment wuz a fair maid, but did not bear increase until she wedded with Hope.

Going to law iz like skinning a new milk cow for her hide and giving the beef tew the lawyers.

O

This is the race track
Rounded and smoothed with care,
Thronged with horses and people
Every day of the fair.

o o o

These are the farmers' products,
Few and far between,
Viewed by reporters and committeemen,
Cared for by farmers green.

—*Stoughton Sentinel.*

Our Book Table.

Trumbull County, Ohio, Horticultural Society. Annual report of the proceedings of this vigorous and prosperous society. James Wilson, Jr., president; E. W. Turner, Newton Falls, secretary.

The Goldfish and its Culture, *by Hugo Mulertt, Cincinnati, O.* This elegant book of over 100 pages, profusely illustrated, presents all the important and essential points concerning the treatment and best methods of propagating goldfish; its history; construction of fish ponds and aquaria; enemies and diseases of the fish, and other useful information pertaining to fish culture.

New Jersey Board of Agriculture. Twelfth Annual Report; P. T. Quinn, secretary. An extraordinary rich and varied amount of useful information is herein presented to the reader. During one of the discussions Mr. Schoonmaker, a Long Island farmer, made the astonishing statement that the use of concentrated special fertilizers had driven yard manures out of the market, and that farmers found it to their advantage to sell the manure made on their farms and buy special fertilizers instead. Prof. Cook had visited their farms and vouched for the correctness of the statements made.

The Bee-Keeper's Guide, *by Prof. A. J. Cook, Lansing, Mich.* The science and art of modern bee-keeping has been brought to such a state of exactness and perfection that those possessed of the necessary qualifications, if they will avail themselves of the excellent practical instructions and masterly teachings laid down in this book, can hardly fail to meet with success. Nothing directly or remotely connected with the keeping and management of bees is omitted or slighted in this work; it is perfect in every detail, and many parts of it are written in so fascinating a style as to infuse apicultural enthusiasm even into indifferent minds. As a teachers' Manual for the treatment of any applied natural science the work may justly serve as a model.

"INDUCING PHYSICIANS NOT TO PRESCRIBE ALCOHOLICS."

The above was the title of a paper read before the National Convention of the Women's Christian Temperance Union on November 2d, 1885, in Association Hall, Philadelphia. It may therefore please the members of that splendid organization to know of the great—the wonderful—success of a new treatment of disease which entirely supersedes the necessity of alcoholics. For sixteen years the "Compound Oxygen Treatment" of Drs. Starkey & Palen (who have more patients on their records than any other regular physicians of Philadelphia) has been used successfully in the cure of various forms of chronic maladies, and in no case has the use of alcoholics been a necessity.

From every one of the States and Territories from which the delegates in that Convention came have come testimonials from patients to the wonderful effectiveness of this new remedy in curing them. And all were cured without the prescription of alcoholics! Some of them speak of the removal of a desire for stimulants, and in a few cases the entire release from bondage to morphine has been one of the results. The following-named persons are among those who report cures:

Mr. John Armstrong, of Lyons, Nebraska, aged 70, cured of dropsy; Rev. Charles F. Bird, Wentworth, Nova Scotia, cured of nervous prostration after being disabled from preaching four years; Rev. John H. Chandler and wife, missionaries thirty eight years in Siam, cured (after return) of malaria and nervous derangements; they are now living in Camden, N. J.; Mr. Alonzo Clark, of the firm of Davis, Collamore & Co., of New York city, cured of inflammation of lungs, after given up by physicians to die; Rev. Charles W. Cushing, D. D., editor of the *American Reformer*, New York, cured of nervous prostration; Mrs. Mary A. Doughty, of Jamaica, Long Island, cured of nervousness and sleeplessness and dyspepsia; Mr. George W. Edwards, St. George's Hotel, Philadelphia, cured of Bright's disease; Mr. F. A. Fielden, of Salem, Mass., cured of nervous prostration; Judge Flanders, of New York city, cured of dyspepsia and nervous prostration; Mr. Martin Hancock, Lake City, Florida, cured of dyspepsia and catarrh; Hon. William D. Kelley, of Philadelphia, cured of hereditary catarrh; Mrs. Mary A. Livermore, the celebrated lecturer, restored to "nearly uninterrupted perfect health and vigor after breaking down from overwork;" her address is Melrose, Mass.; Rev. George C. Needham, evangelist, and wife, send letters giving testimony of advantages resulting from Treatment used by their friends and acquaintances; Hon. William Penn Nixon, of *Inter-Ocean*, Chicago, Ill., cured of disease of lungs; Frank Siddall, of Philadelphia, cured of nervous and physical prostration; W. H. Whiteley, Philadelphia, cured of sciatica and nerve prostration. We have printed statements from each of the foregoing, which will be sent to any address on application.

Rev. Edward J. Fisher, pastor of a Presbyterian church at Bristol, Morgan County, Ohio, writes:

"A Treatment cured me entirely of a severe attack of pneumonia, and I used only two-thirds. The remainder cured a neighbor of pneumonia in its last stages."

Rev. Anthony Atwood, a widely known superannuated Methodist clergyman, of the Philadelphia Conference, at the age of eighty-four, writes: "A swallow of the Oxygenated will stop the irritation. So much it has done for an old man. A young man might be cured permanently. I recommend Compound Oxygen to all who suffer from throat diseases."

Rev. A. W. Moore, editor of the *Centenary*, Darlington, S. C., says: "I feel more life—more vigor—than I have for years. I believe Compound Oxygen a blessed, providential discovery."

Rev. Cyrus Hamlin, D. D., LL. D., President of Middlebury College, Vermont, writes: "I derived so much benefit from your Compound Oxygen Treatment, last year, that I will ask you to send me the same supply for home treatment, with the inhaler, for which I inclose price. By my advice others have tried it, and never without benefit."

In the use of the Compound Oxygen the patient takes Nature's simple plan and follows it. Let us see what that plan is:

When the life-blood has made the circuit of the arteries and veins—before re-entering the heart to be started on its circuit anew—it spreads over the surface of the air-cells of the lungs, a surface greater in area than the entire exterior covering of the body. Here the air inhaled by the lungs meets it, changing its color to crimson, and imparting to it new vitality. *Here kindly Nature has been ever a Healer and Repairer;* here modern science finds the proper place to help Nature in the most effective way. Taking the fact that the usual proportions of the mixture of the elements of the atmosphere are the proportions exactly adapted to the needs of the average man in health, and seeing that an extra effort is needed for the sick to repair the waste of vital force in the blood, a different proportion is made in a mixture of the atmospheric elements—a lesser quantity of Nitrogen is put with a larger portion of Oxygen. When this "Compound Oxygen" is used, the blood enters the heart with increased vitality. That organ receives a portion of that vitality from the blood in its passage, and sends it forth with more force and less wear to itself; the vital currents leave on their circuit new deposits of vital force in every cell of tissue over which they pass, and return again to the lungs for a new supply. This simple story is the rational explanation of the greatest advance that medical science has yet made.

"The Compound Oxygen Treatment," which Drs. Starkey & Palen, 1529 Arch St., Philadelphia, have been using for the last sixteen years, is a scientific adjustment of the elements of Oxygen and Nitrogen *magnetized*, and the compound is so condensed and made portable that it is carried by express to every portion of the country—indeed, it is sent all over the world.—*Adv.*

BUYING SEEDS requires greater confidence in the integrity of the seller than any other article of merchandise. Perhaps no grower or dealer in America is more rapidly gaining the confidence of the public for strict reliability than is Mr. Tillinghast with his "Puget Sound" brand of Cabbage Seeds. He has customers who plant out 25 to 50 pounds of seeds, the product, aggregating hundreds of thousands of dollars, being at stake. Any grower desiring home-proof that these seeds are the best, will be referred to persons in his own State who have fully tested them, by addressing Isaac F. Tillinghast, La Plume, Lackawanna Co., Pa.—*Adv.*

THE HELPING HAND.

This department of THE PHILADELPHIA WEEKLY PRESS is devoted exclusively to information and open discussion of subjects of interest to women, and covers the entire field of practical household work, home culture and entertainment. It is attracting much attention. In connection with this department THE PRESS offers the magnificent book, "Great Truths by Great Authors," the book and THE WEEKLY PRESS for one year being sent for $1.75. The publishers' price of the book alone is $2.00.

Send for premium list.—*Adv.*

A NEW METHOD OF FARMING AND GARDENING.

The Hon. A. N. Cole of Wellsville, N. Y., has discovered a system of sub-surface drainage and irrigation by which crops are said to be wonderfully increased—estimated at five-fold or more. His discoveries have been embodied in a handsomely illustrated book which has been published by THE ANGLERS' PUBLISHING CO., 252 Broadway, New York.—*Adv.*

A GREAT OFFER.

Recognizing the superior excellence of the St. Louis *Magazine* we have arranged to furnish it in connection with THE AMERICAN GARDEN at the low price of $1.75 a year for both publications, the *Magazine*, under its enlarged and improved condition, being $1.50 a year alone. Those wishing to see a sample copy of the *Magazine* and a set of gold picture cards, before subscribing should send 10 cents to St. Louis *Magazine*, 213 North Eighth street, St. Louis, Mo., or send $1.75 net, to THE AMERICAN GARDEN.—*Adv.*

GOOD WATER.

The Wankesha Glenn water advertised in this issue is one of the very finest of all table waters, and is fast becoming known as a specific for many diseases of the stomach and bowels. It seems like "carrying coals to Newcastle" to bring spring water from the West to the East, but the Wankesha Glenn is gaining many converts to its virtues in all sections.—*Adv.*

COLGATE & CO'S
CASHMERE BOUQUET PERFUME.

This is one of the richest, most lasting, and refined of all handkerchief perfumes. The name and trade-mark of

COLGATE & COMPANY

on every bottle assure purchasers of superior and uniform quality.

from N. W. Ayer & Son Philadelphia

Does Newspaper Advertising Pay?

A PROMINENT SEEDSMAN, now a large advertiser, when giving his first order for Newspaper Advertising, remarked to the writer: "It seems supremely ridiculous, that after spending several thousand dollars in the preparation of a beautiful catalogue, we should have to spend as much more to induce people to ask us to give it to them." He, however, concluded that it *paid*, and kept at it. If you have any serious doubts on the subject, don't ask us—of course we would say *yes*—but ask *The Dingee & Conard Co.; Peter Henderson; Hiram Sibley & Co.; L. W. Goodell; D. M. Ferry & Co.; Ellis Bros.; Jno. S. Collins; Price & Knickerbocker; T. S. Hubbard; W. & T. Smith; Chas. T. Starr; W. Atlee Burpee & Co.; David Landreth & Sons; Jas. F. Le Clare; Robt. Buist, Jr.; Henry A. Dreer; Hoopes Bros. & Thomas; Niagara White Grape Co.*, and dozens of others who have been doing it in a greater or less degree for years. If, however, you decide to spend any money in Newspaper Advertising, then you want to talk with us. Most of the above named parties do their advertising with us (we are sorry the others do not), they can tell you how we do business. For many years we have made Newspaper Advertising our close and constant study—we confine our attention exclusively to this branch of business, and are prepared to place any American newspaper advertising economically, promptly and satisfactorily. We have no specialties to urge upon an advertiser, but give thoughtful, unprejudiced advice regarding selection of papers best adapted to accomplish the desired purpose. Our record speaks for itself—we cannot change it. The total of our first year's (1869) business was $15,000; clerks were unnecessary accessories, and a room 18x20 then answered all our requirements. To-day we occupy for business purposes more than 10,000 square feet of floor room; our pay-roll includes the names of over ninety employees, and the aggregate of the charges on our books for the year ending December 31st, 1884, was $922,479.87; this amount including no advance orders or business which had not been actually placed within the year. We believe it is universally conceded that we do very much the largest business in our line in the world, and it has not come to us by accident. Is it not fair to assume that the largest amount of business secures the lowest prices? The experience of our customers seems to justify this assumption, and many of them have come to us after extended dealing with other advertising houses. Of the following points all who are interested can rest confidently assured: We *never* do business at a loss, *never* at cost, *always* at a fair profit, *always* the best we know how. An investigation of the details of such a business as ours should certainly interest those who advertise, or any about to commence in that line. It is a pleasure to us to explain our system and its workings. We therefore extend the invitation to all who spend any money in newspaper advertising to call and see us, or drop us a line.

N. W. AYER & SON,
Newspaper Advertising Agents, PHILADELPHIA.

ARTHUR'S ILLUSTRATED Home Magazine

For choice reading, beauty of illustration, and typography, has no rival.

The HOME MAGAZINE aims to be that particular periodical indicated by its name. To the homes and firesides of the people it enters as an intimate friend, and furnishes to all within the precincts of home agreeable diversion in a literary form, free from impurity, and designed to encourage and stimulate the practice of the domestic virtues and high probity in all the affairs of life.

In addition to the General Literary Department many pages are devoted to home decorations and household affairs.

Terms: $2.00 per year. Write for FREE SPECIMEN COPY and club rates.

T. S. ARTHUR & SON,
Philadelphia, Pa.

AGENTS WANTED. AGENTS WANTED.

THE AMERICAN ANGLER.

A weekly journal devoted exclusively to FISH, FISHING and FISH CULTURE: Practical Essays on Angling and Anglers' Implements, and Reports of Fishing from all parts of the United States and Canada. Seth Green, the eminent fish culturist, has charge of the Fish Culture Department. Published weekly, at $3.00 per annum.

AGENTS WANTED. AGENTS WANTED.

"THE NEW AGRICULTURE."

BY HON. A. N. COLE.

A Startling and Valuable Book

FOR

FARMERS AND MARKET GARDENERS.

FULLY ILLUSTRATED.

TROUT STREAMS MADE AT WILL.

Handsomely bound in cloth and gold. Price $2.00.

After many years of patient labor and investigation into the fundamental laws governing the movements of the waters upon and beneath the soil. Mr. Cole has discovered a system of subsurface drainage and irrigation, by which the most wonderful results have been produced.

He aptly calls it "The New Agriculture." Concisely stated Mr. Cole's system has the following advantages as compared with the methods of agriculture now in general use:

1st. Cerial crops are increased more than four fold.
2d. The size, flavor and enhanced production of fruits and vegetables are in proportion as five to one under the old systems.
3d. Vegetation of all kinds is rendered absolutely free from diseases, more especially from that arising from fungoid infection.
4th. The ground worked under this new system being measurably impervious to frost, the producing season is prolonged from forty to sixty days.
5th. It creates a rich, moist and loamy soil out of the most unpromising hardpan.
6th. It prevents the washing of surface soils from hillside farms during heavy rains.
7th. Drought is effectually provided against.

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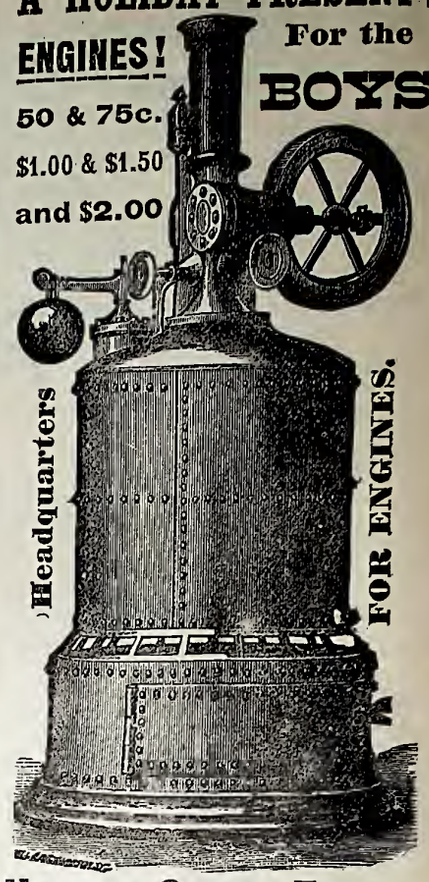

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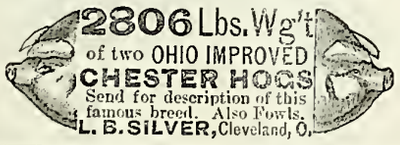

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